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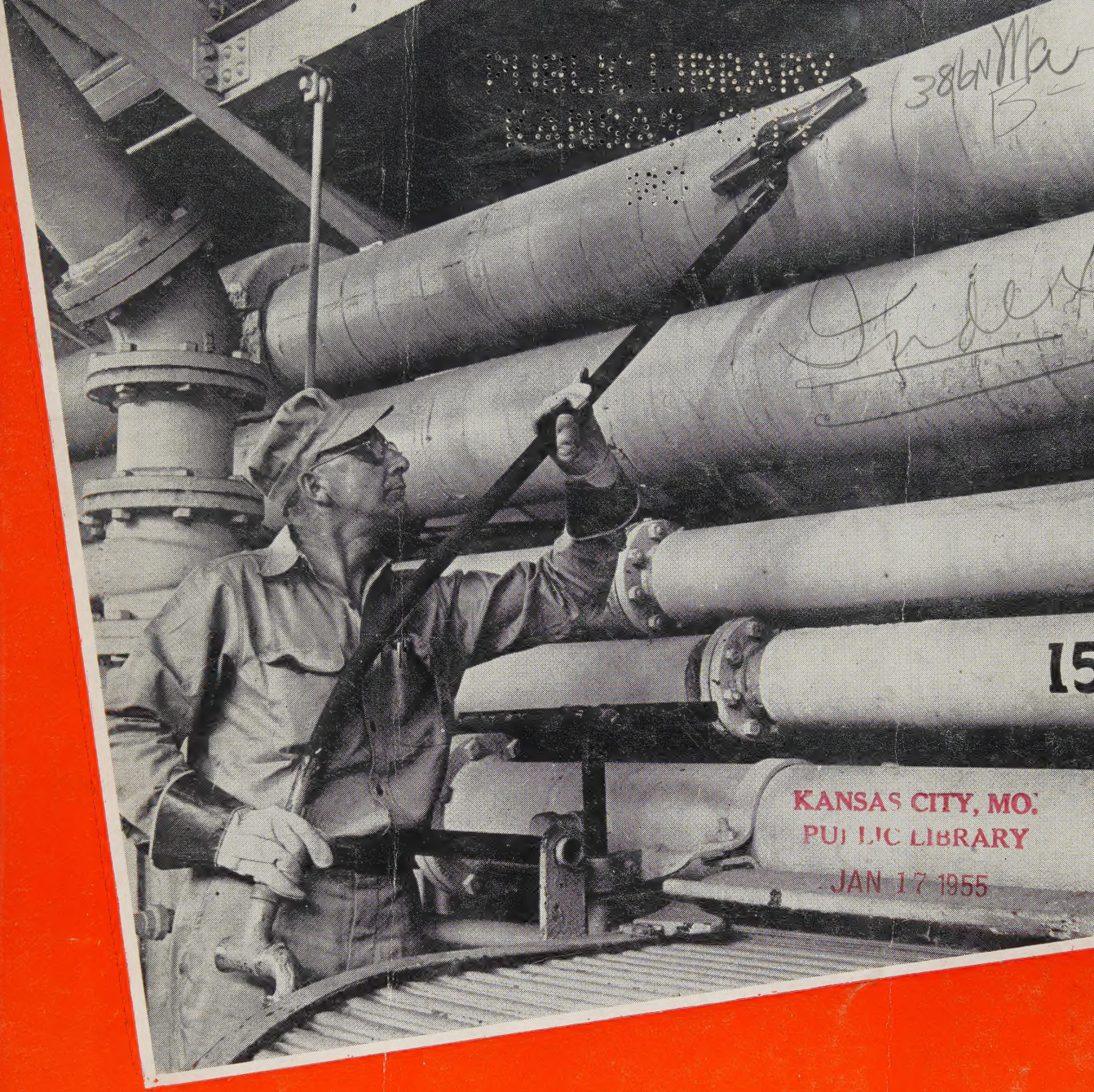

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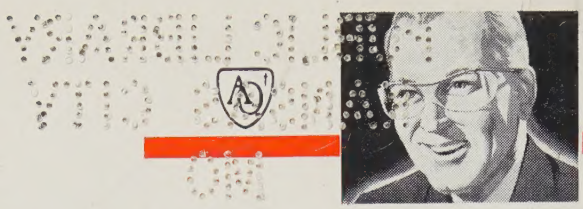
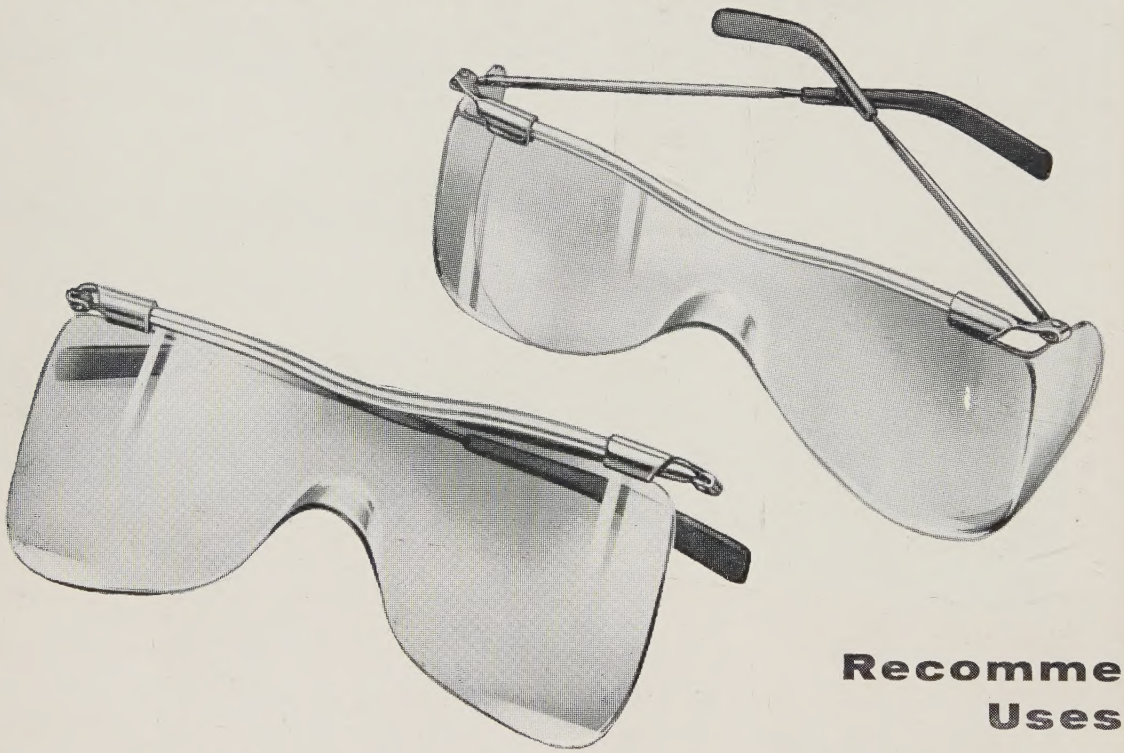
Safety Maintenance and Production

EST. 1901 AMERICA'S PIONEER MAGAZINE IN ITS FIELD



All-Plastic Goggles

Now...AO† introduces two lightweight spectacle goggles with complete interchange of lenses and temples!



Illustrated are Nos. 786 and 787 — two of the latest and lightest AO All-Plastic Lens Goggles, with noncorrosive endpieces and metal skull temples. In the field of lightweight eyecare they show the same benefits of applied engineering as AO's goggles for heavier exposures.

Lenses, endpieces, and temples can be easily replaced or assembled. One-piece lenses of either clear or green acetate have high impact resistance. Replacement is simple — just slide off the endpieces and reassemble. No. 786 is ideal for use over regular spectacles for temporary or "on and off" wear. Model 787 is identical except that it has side shields for added protection against laterally flying particles.

Recommended Uses

(1) For light grinding, light machining, spot welding, woodworking, yard work where dust hazards exist, and for protecting R Safety Glasses or regular glasses.

(2) For plant visitors and others who may be exposed to eye hazards for short periods.

Keep an adequate supply of these goggles (and extra lenses) on hand always for good fitting. Check with your nearest AO Safety Products Representative.

American Optical
SAFETY PRODUCTS DIVISION

†T.M. Reg. by American Optical Company

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For details, use Key # A-1 on card on page 71)

get modern eye protection WITH JONES FULL VISION VISOR GOGGLES

CLEARVIEW VISOR GOGGLE
MODEL No. 1
WITH SCREENED PORTS

WITH ALL THESE EXCLUSIVE FEATURES . . .

- VISOR TOP STOPS GLARE from overhead light
- 100% VISIBILITY for greater safety and comfort
- FITS over LARGE frame GLASSES
- NO STRUTS or frame to obstruct vision
- NEW VISOR head band suspension for added comfort
- REPLACEABLE one-piece lens
- NEW down-angle lens
- INCREASED impact strength
- NO FOGGING—no pitting
- NO GLARE, distortion or reflection
- NEAT — smart — modern appearance
- SAFELY NON-FLAMMABLE
- LIGHT WEIGHT—cool comfortable
- ECONOMICAL to use
- ULTRA VIOLET ABSORBING LENSES

for INDUSTRY and SPORTS

ELIMINATE EYESTRAIN and REDUCE FATIGUE

ASSURED WORKER ACCEPTABILITY

JONES FULL VISION VISOR GOGGLES

ONE-PIECE SHATTERPROOF PLASTIC LENS
(METHYL-METHACRYLATE)

Ski Goggles
Safety Goggles
Sun Goggles

FOR NEW CATALOGUE CALL YOUR JOBBER OR WRITE TO:

JONES AND COMPANY • 125 CATLIN AVE. • RUMFORD, RHODE ISLAND

(For details, use Key # A-2 on card on page 71)

AT LAST!

A portable **Explosion-Proof** *industrial vacuum*

Designed for Complete Safety in Industrial Housekeeping in Hazardous Areas

● Here is the *first* industrial vacuum cleaner to combine portability, efficiency and *safety*.

Yes, its powerful ⅞ HP motor and all electrical fittings are explosion-proof . . . *completely* explosion-proof!

You can safely use this revolutionary wet-dry vac amid explosive gases, vapors, dust and in dozens of other situations where danger of explosion or fire had previously made use of a vac too risky.

It's ideal for cleaning floors, walls, overhead pipes, machinery or stock bins where there is grease, chemicals or other flammable materials. And since it works equally well for wet or dry pickup, it's just the thing for cleaning combustible material from storage tanks.

Mills and elevators, chemical plants, petroleum refineries, gas plants, and distilleries are just a few of the locations where this new explosion-proof vacuum is especially suited.

Pictured above is a pilot model of this sensational new vacuum cleaner which will soon be in mass production.

Its first public showing is tentatively scheduled for the PLANT MAINTENANCE SHOW. Look for it in Multi-Clean's Booth No. 632.

MAIL COUPON TODAY!

MULTI-CLEAN PRODUCTS, INC.
2277 Ford Parkway, Dept. SMP-15
St. Paul 1, Minnesota

Gentlemen: Send me more details on the Explosion-Proof vac. I'd like floor maintenance information on:

☐ concrete, ☐ asphalt tile, ☐ terrazzo, and_____

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Name_____ Title_____

Firm_____

Address_____

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(For details, use Key # A-5 on card on page 71)

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SAFETY MAINTENANCE & PRODUCTION

FORMERLY "SAFETY ENGINEERING"
EST. 1901

VOL. 109, NO. 1 **JANUARY, 1955**

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COVER PICTURE
By courtesy of E. I. Du Pont de Nemours & Co., Inc.

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

It's Safe to Say

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★ GRASS ROOTS SAFETY

WHEN THE EDITORIAL page of a monthly magazine "plugs" a television program, that comes under the head of news!

Over a major network there appears each week a program known by the succinct title of "Medic." Staged with a minimum of commercial fanfare and with flawless attention to detail and accuracy, "Medic" engenders tremendous respect for unsung heroes of the medical profession.

Just before the Christmas holidays the program dramatized with almost pulse-stopping fidelity the tragic results of mixing alcohol and gasoline on our streets and highways.

With an underkeyed, underplayed poignancy that tugged at the emotions, the story line portrayed a young secretary who was involved in a motor accident of dreadful consequences.

Using none of the ordinary, high-pitched theatricalism of the average program, "Medic" depicted the admission of a young girl into a hospital. Starting with an ambulance siren, proper mood was sustained through scenes in the emergency room, examination by the staff on duty, the injection of fluid to combat shock, the use of blood plasma and specialist consultations.

Avoiding any contrived approach to the sensationally gruesome or the artificiality of the average soap opera, Dow Chemical Company, sponsors of "Medic" captured with frightening realism the cause and effect of far too many motor vehicle accidents.

The resulting presentation therefore was able to create a more lasting impression than the hackneyed—"why did I do it?"

★ ★ ★

Wartime casualties and commercial air crashes are inherently dramatic. Thus they are able to grip the imagination and move the spectator beyond the power of words.

Accidents, whether industrial or motor vehicle, lend themselves to dramatization with dignity. Human eyesight sacrificed in a plant for want of proper eye protection is every whit as great a loss as blindness occurring on a battlefield. An arm or leg amputated after an industrial or highway accident is as crippling as the permanent injury suffered by a veteran in defense of his homeland. And the lump in the throat should be just as large.

Sheer force of numbers eventually can inure us to human suffering. It is high time therefore that a great national organization should find the means of bringing home direct to families and workers the folly of disregarding rules designed for safety against accidents in industry.

We can take comfort in the knowledge that injuries at work do not take anything like the aggregate toll exacted by vehicle accidents. Nevertheless they are too common despite the best efforts of safety leaders and top management. Taking chances on the job can be as dangerous as taking chances on the highways.

Dow Chemical Company is to be congratulated for its efforts to provide lasting food for thought in presenting the deeply moving consequences of unsafe driving. The time may soon come when a consistent program showing every phase of accident prevention will go into the living room of millions of American families. Perhaps then the fireside influence will carry the message of the safety crusade with appropriate emphasis exactly where it belongs—into the heart of the man on the job.—H. A.

A Safe, Prosperous and Happy New Year

Fact:

NEW "Package" Precipitron Features Movable Nozzle Washing and Adhesive Application

2,000 to 10,640 CFM—12 SIZES—ONLY 38 INCHES LONG

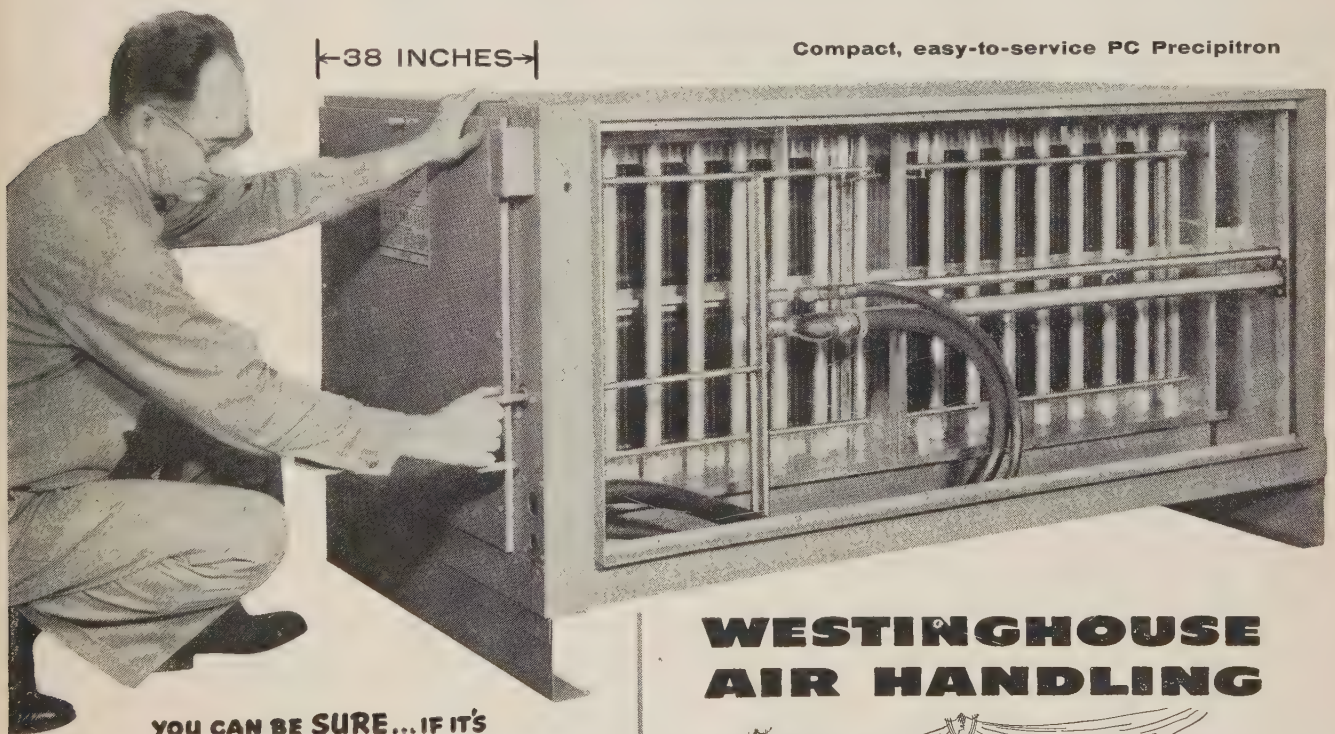
Another "First" from the Sturtevant Division of Westinghouse—the Type PC Precipitron—it's the "packaged" unit you have been looking for. An outstanding addition to the most complete line of air handling and air cleaning apparatus.

This remarkable unit features movable nozzle washing—the only successful and practical method of mechanical washing — and power adhesive spraying with movable nozzles. This eliminates need to open the unit or apply adhesive by hand. It may be mounted on floor, platform or ceiling, has built-in drain pan facilities, after filters and complete enclosure, including duct flanges.

Service is easy. The PC Precipitron has either right or left hand access through the side panel.

This compact PC Precipitron is ideal for use with air handling or air conditioning units, particularly in hospitals, retail stores, libraries and office areas. Equally applicable to industrial process requirements.

See this amazing unit at the A.S.H. & V.E. Show in Philadelphia. Or, call your Westinghouse-Sturtevant Sales Engineer . . . he is the "Man With The Facts" on air handling and electronic air cleaning.



Compact, easy-to-service PC Precipitron

WESTINGHOUSE AIR HANDLING

YOU CAN BE SURE...IF IT'S Westinghouse

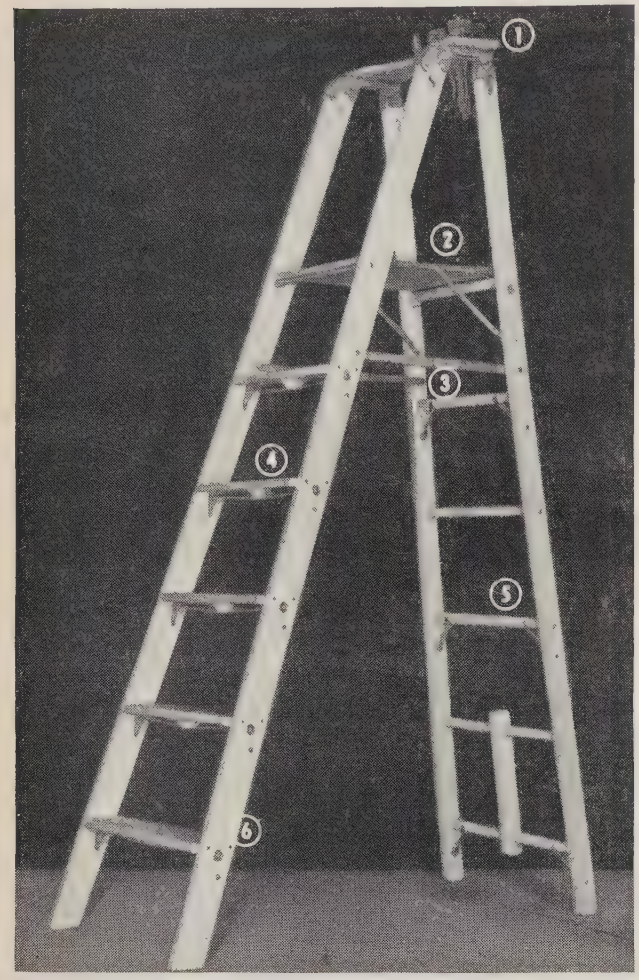
J-80428

Silentvane Fan | Speedheater | PC Precipitron | Industrial Heater | Ventilating Set | Air Handling Unit

SEE IT AT THE A.S.H. & V.E. SHOW! January 24 thru 28, 1955 Here's where you'll find the new PC Precipitron, with its exclusive features. Booths 540-544.

(For details, use Key # A-6 on card on page 71)

This Ladder Will Reduce Accidents In Your Plant



"GOLD MEDAL" SAFETY PLATFORM LADDER

1. Top slotted for tool rack to prevent injury from fallen tools. (¾" x 7" x 18")
2. Large slatted platform (14" x 19") lets worker stand with hands free. Angle iron supports give extra strength.
3. Safety shield over spreader joints prevents pinched fingers.
4. Truss rods and knee braces under every step.
5. Sturdy 2-5/32" rungs provide safe support for an assistant.
6. Best ladder stock for front and rear rails. Heavy gauge hardware plated to resist rust.

Tested and approved by Underwriter's Laboratories, Inc. Conforms to ASA and all local safety codes.

There are "Gold Medal" Ladders for every purpose. Single, Step and Extension. Wood, Aluminum or Magnesium.

FOR FULL INFORMATION WRITE FOR CATALOG L-71-R

FOR GREATER SAFETY...EFFICIENCY...ECONOMY

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38-21 12th Street, Dept. SM&P Long Island City 1, N. Y.
6931 Stanford Ave., Los Angeles 1, Calif.
Branches in all principal cities
(For details, use Key # A-7 on card on page 71)

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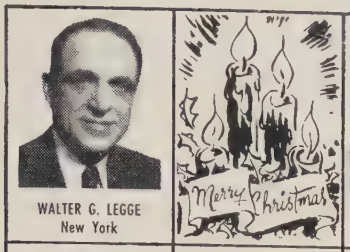
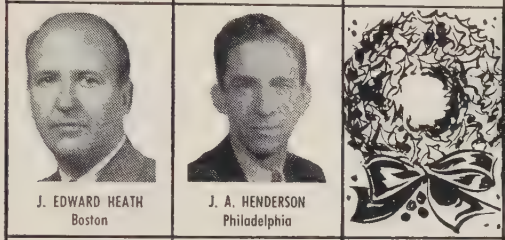
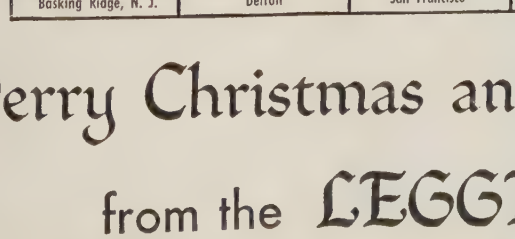
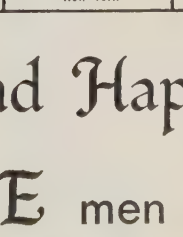
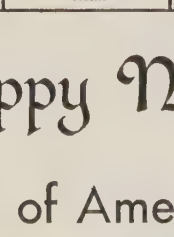
May your pleasures be many, may your burdens be small...
That's the Holiday wish to you, from us all.

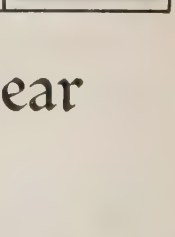












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New York

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Fresno

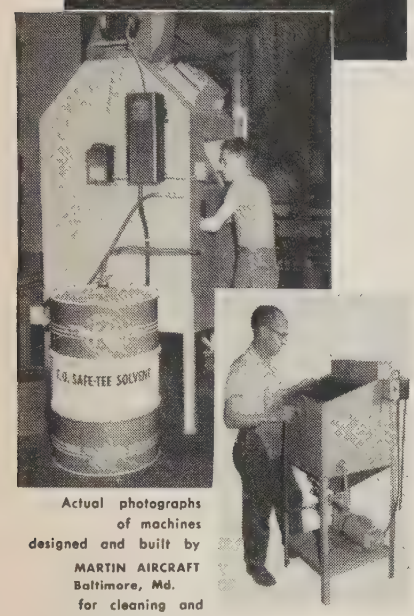
J. W. TURNER
Toronto

Merry Christmas and Happy New Year
from the LEGGE men of America

Walter G. LEGGE Company, Inc., 101 Park Ave., New York 17,

(For details, use Key # A-8 on card on page 71)

FINE ORGANICS' 'SAFE-TEE' SOLVENT F.O. 128 GOES TO WORK FOR INDUSTRY



Actual photographs of machines designed and built by MARTIN AIRCRAFT Baltimore, Md. for cleaning and degreasing large and small parts with FO. 128

FINE ORGANICS is proud of the part it plays in helping **THE MARTIN COMPANY** perform an effective cleaning operation on both large and small parts. Many leading organizations are finding **F.O. 128** not only a reliable cleaner but a decided factor in the elimination of personnel health hazards and wasted man hours.

SAFETY ENGINEERS

find the high flash point makes the use of this solvent desirable wherever fire hazards prevail.

INDUSTRIAL HYGIENISTS

recommend replacing Carbon Tetrachloride with F.O. 128. Low toxicity aids in avoiding harmful effects on personnel.

PLANT MAINTENANCE SUPERVISORS

appreciate the versatility of this fast, non-corrosive cleaning solvent. Ideal for heavy work, yet will not damage delicate machined surfaces or attack insulation. It is used effectively for cleaning and degreasing ELECTRIC MOTORS, POWER GENERATORS, CONDENSORS, STARTERS, PRODUCTION EQUIPMENT, and all areas in the plant where greasy, oily dirt has to be removed.

Write Dept. 'B' for information on our other Safe-Tee Solvents—and the name of your nearest F.O. representative.

Ask for our Technical Bulletin "How To Clean Electric Motors."

FINE ORGANICS, Inc.
211 East 19th St. • New York 3, N. Y.

(Use Key # A-9 on Inquiry Card on page 71)

THE FUTURE SHOWS

Chicago, Ill. *Jan. 24–27*

Sixth National Plant Maintenance and Engineering Show (International Amphitheatre). Clapp & Poliak, Inc., Show Management, 341 Madison Ave., New York 17, N. Y.

E. Lansing, Mich. *Feb. 14–17*

Fourth Annual Industrial Ventilation Conference (Michigan State College). James C. Barrett, Michigan Department of Health, Division of Occupational Health, Old Dewitt Road, Lansing 4, Mich.

New Orleans, La. *Feb. 27–Mar. 1*

Southern Safety Conference and Exposition (Jung Hotel). W. L. Groth, Executive Director, P. O. Box 8927, Richmond, Va.

Philadelphia, Pa. *March 8–9*

Twenty-first Annual Philadelphia Regional Safety and Fire Conference and Exhibit (Broadwood Hotel). Walter W. Matthews, Managing Director, Philadelphia Safety Council, 17th & Sansom Streets, Philadelphia 3, Pa.

Houston, Texas *March 21–22*

Sixteenth Annual Texas Safety Conference (Rice Hotel). J. O. Musick, General Manager, Texas Safety Association, Inc., 830 Littlefield Bldg., Austin, Texas.

Pittsburgh, Pa. *March 29–31*

Thirtieth Annual Western Pennsylvania Safety Engineering Conference & Exhibit (Hotel William Penn). H. H. Brainerd, exec. manager, 605 Park Bldg., Pittsburgh 22, Pa.

Indianapolis, Ind. *March 30–31*

Eighth Central Indiana Safety Conference & Exhibit (Claypool Hotel). Indianapolis Safety Council, 320 N. Meridian St., Indianapolis, Ind.

Kansas City, Mo. *March 31–April 1*

Central States Safety Congress (Municipal Auditorium). George M. Burns, Director, Kansas City Safety Council, 419 Dwight Bldg., Kansas City 6, Mo.

New York, N. Y. *April 11–15*

Twenty-fifth Annual Greater New York Safety & Exposition (Hotel Statler). Harold C. Mesch, general chairman, Greater New York Safety Council, Inc., 60 E. 42nd St., New York 17, N. Y.

Niagara Falls, N. Y. *April 19–21*

Fifteenth Annual Western New York Safety Conference, in cooperation with the American Society of Safety Engineers (Niagara Hotel). Patsy E. Gismondi, Executive Secretary, 1436 Delaware Ave., Buffalo 9, N. Y.

Cleveland, Ohio *April 26–28*

Twenty-fifth Annual All Ohio Safety Congress & Exhibit (Hotels Cleveland and Hollenden). A. W. Moon, Congress Manager, Industrial Commission of Ohio, Safety & Hygiene Div., Columbus 15, Ohio.

Grand Rapids, Mich. *April 26–28*

Twenty-fifth Annual Michigan Safety Conference (Pantlind Hotel and Civic Auditorium). R. H. Goring, Executive Secretary, Michigan Bell Telephone Co., Detroit, Mich.

Chicago, Ill. *May 16–20*

Materials Handling Exposition (International Amphitheatre). Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

Winston-Salem, N. C. *May 18–20*

Twenty-fifth Annual North Carolina Statewide Industrial Safety Conference (Robert E. Lee Hotel). H. S. Baucom, Safety Director, North Carolina Industrial Commission, Raleigh, N. C.

Armortred NEOPRENE Soles and Heels

SAFETY—SERVICE AND STYLE

NEOPRENE COMPOSITION
A standard of quality

14 & 18 Iron—Blk-Brown

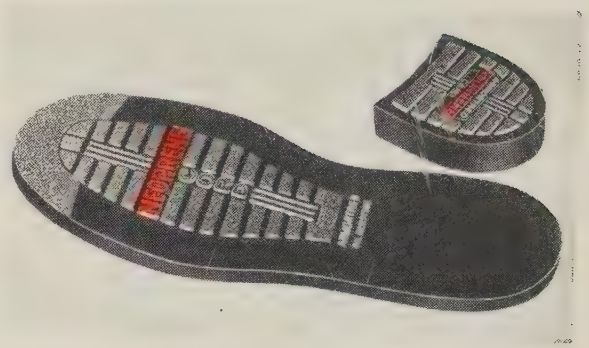
The largest selling sole of its kind

NEOPRENE CORK-GRIP
It's light—yet rugged

15-18-21-Irons—Blk and Brown

A soft flexible step with day-long comfort

NEOPRENE CORD
It's new—it's colorful



14 & 17 Iron—Blk-Brown—with and without Labels

A safe-sure step and tough long wear

(For details, use Key # A-10 on card on page 71)

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ARMORTRED Soles made with DUPONT NEOPRENE

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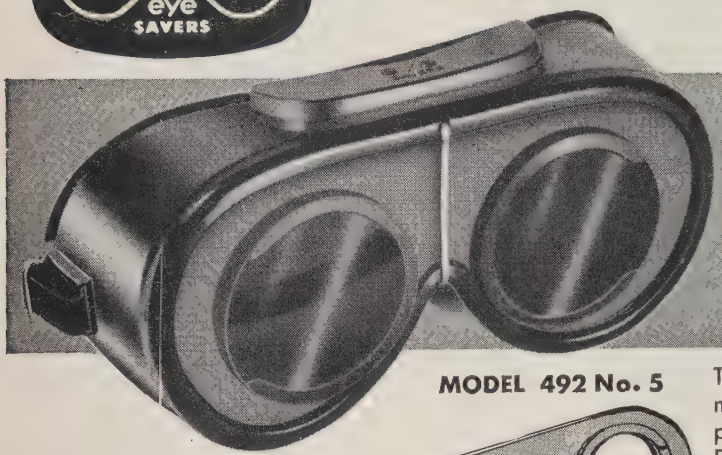
MANUFACTURED AND DISTRIBUTED BY **QUABAUG RUBBER COMPANY** NORTH BROOKFIELD, MASSACHUSETTS

WATCHEMOKET STAC-VENT eye SAVERS

New! WELDING GOGGLES

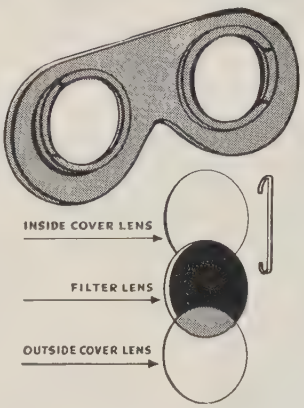
Soft Vinyl Frame form-fits face for greater comfort, better protection.



MODEL 492 STAC-VENT

Furnished with replaceable 50 mm round Federal Specification, glass filter lenses No. 3, 4, 5 or 6 shades . . . protected both sides by .020" thick hard plastic cover lenses.

MODEL 492 No. 5



Illustrated is Model 492 with No. 5 Shade perfectly matched glass filter lenses. Lens Holder (right) is of heavy flexible opaque plastic with lens pockets which hold lenses tight in perfect position for best vision. Lenses are easily removed and replaced. A Position Lock Bar secures lens holder in frame.

Eye Savers perfectly matched lenses are Standard 50 mm Federal Specification Glass Filters available in shades No. 3, 4, 5 or 6. Hard plastic cover lenses .020" thick protect the glass filters and wearer inside and out. Outside cover lens is easily changed without disturbing the lenses.

The New Light-Tight STAC-VENT ventilation which drafts-off moist air from inside the goggle to eliminate fogging now permits adaptation of these modern, safer soft vinyl frame Eye Savers to welding applications.

SAFER because the soft vinyl form-fits comfortably to the contours of the face and nose — closing all gaps.

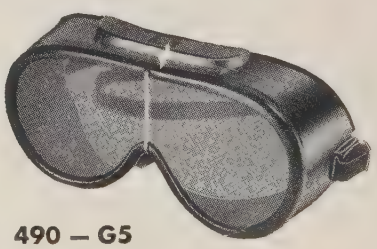
MORE COMFORTABLE because of light weight and soft fit next to the skin and because cover goggle design provides easier vision.

MORE FLEXIBLE because lenses are easily changed or replaced, because lens holder is easily replaced. And Stac-Vent Eye Savers are wide enough to fit over the largest prescription frames.

FOR STAND-BY PROTECTION IN ARC WELDING AREAS

MODEL 490 STAC-VENT

Opaque black, soft vinyl frame furnished with replaceable (interchangeable with lens holder) medium green (G3) or dark green (G5) methacrylate lens. These lenses are shatterproof, will not pit, and will resist heavy impact (.080" thick). Methacrylate Eye Savers lenses absorb sufficient infra-red and ultra-violet rays to provide protection in arc welding areas but not for direct arc welding. Also sufficient to provide full protection from the less intense glare of gas welding or cutting. Lightweight — Comfortable — Low Cost Protection.



MODEL 490 — G5

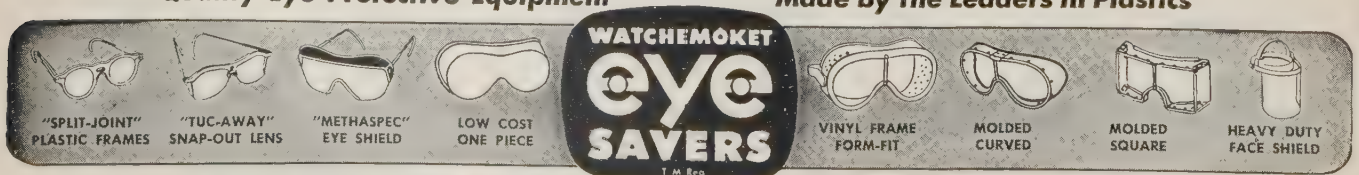
MODEL 425 "VISOR-TUC"

Almost 100% protection in a light weight comfortable spectacle with over-eyes visor protection and semi-cup side shield protection. Furnished with medium green (G3) or dark green (G5) methacrylate lenses (same as above). Ideal for wearing under welding helmet and for working in welding areas. Replaceable lenses snap-in-out; available in clear and light green shatterproof methacrylate as well. Retrax temple telescopes to perfect fit and easy comfort. "Visor-Tucs" weigh slightly over an ounce.

MODEL 425 G5

See Your Authorized Eye Savers Supplier, or write direct for full Information on the New MODEL 492 and other modern Eye Savers

Quality Eye Protective Equipment ***Made by the Leaders in Plastics***



WATCHEMOKET OPTICAL CO., INC.

238 West Exchange St., PROVIDENCE 3, R. I. ***In Canada: Levitt-Safety Limited, Toronto 10, Montreal 26***

(For details, use Key # A-11 on card on page 71)

We've found that it's been a big help to...

INVESTIGATE MINOR ACCIDENTS

By KEITH L. PURCELL
Asst. Safety Mgr.
Caterpillar Tractor Company
Peoria, Illinois

EXPERIENCE HAS TAUGHT our company that investigation of the causes of accidents has been one of the main tools of our accident prevention program. The basic cause of an accident may or may not be responsible for an injury, but, if it is responsible for an injury, it may be a serious or very minor one.

The extent of the injury, therefore, is a matter of degree. It follows that if we investigate injuries of only a serious nature, we are automatically turning down the opportunity to study the greater bulk of the causes. I frankly believe that like an iceberg, hazards investigated are only the smaller part of existing hazards.

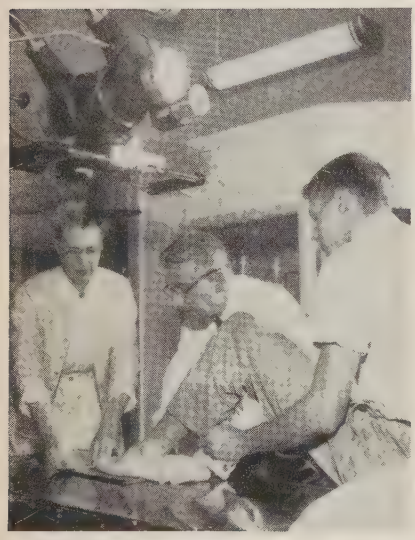
It then follows that the real opportunity should lie in the area of accidents causing minor injuries or accidents causing no injury at all. (I realize that these accidents are the most difficult to locate because employees do not feel the necessity of reporting an accident unless it breaks or destroys equipment or property, or causes an injury.)

The only practical approach to this problem is one of investigating every reportable accident and injury. Our company has, over the past 10 years, investigated ALL first aid injuries, that is, injuries involving only treatment by the medical division. We have also investigated some cases of non-occupational illness to rule in or out, the possibility of an occupational disease factor.

Before going too much further, let's clarify what we are really attempting to do. We frankly, are not or should not be investigating injuries. I think this is a medical problem. Also, we are not, in a sense, investigating accidents. I don't think this is really our objective.

In my opinion, our prime objective is to investigate the causes of all accidents that occur and to that end we have devoted a great deal more time in our company than is normally spent by many similar types of industries. We have discovered that in order to eliminate personal injury, we must (1) establish the cause of an injury; (2) determine

First aid cards are kept with injury, medical, and investigator's report tabulated on them.



Investigators work closely with well-equipped medical staff. Here foot gets examination.

A Safety Investigator checks an overhead crane for any possibly unsafe conditions.

whether it is personal error or machine failure; and, (3) discover whether proper instructions have been given to the employee when placed on a job.

After these facts have been determined, we are in a position to recommend that action be taken by operating personnel. If we are to investigate these accidents properly, we must have a highly trained safety investigator.

The investigator must have a wide knowledge of the shop operation, particularly of the area in the shop to which he has been assigned. He must be familiar with the state health and safety codes and with all company policies. He must be trained to write intelligent reports, so that the information that he gathers may be transmitted in clear, concise language to the operational department. Then they, too, will have a clear understanding as to the cause and possible action to eliminate future accidents.

Informed on All Accidents

If we are to achieve our objective, we recognize that by some means we must be informed on all first aid cases and all accidents which fail to involve personal injury. If an employee is injured to the extent that he requires medical treatment, it is easy to be aware of the injury.

This is accomplished by a system of first aid cards which are picked up at the start of each shift by the investigator assigned to an area. The investigator can then go to the work location of the injured employee; and, in the presence of the injured employee and his supervisor, gather all the necessary information regarding the accident. This information is carefully recorded and filed for future reference by the safety division.

If an accident occurs which does not involve personal injury, but machine breakage, tool spoilage or scrap material, then we are generally informed of this either by letter or by word of mouth from the operating personnel. If neither an injury nor damaged equipment results from an accident, this poses rather a serious problem for becoming aware of the accident.

For this reason, investigators in our plant travel throughout the shop during each shift so they can come upon these conditions and be able to make investigations and suggestions for correction.

Steady Injury Decline

Since this program was started, we have experienced a steady decline in the number of actual first aid cases. This has, we feel, resulted in a steady decrease in the number of lost time cases at our plant. It has been our experience that we will have approximately 1 lost time case for each 500 first aid visits. We know that if we have a reduction in first aid cases then the potential for lost time cases and fatalities has been greatly reduced which, after all, is our main objective.

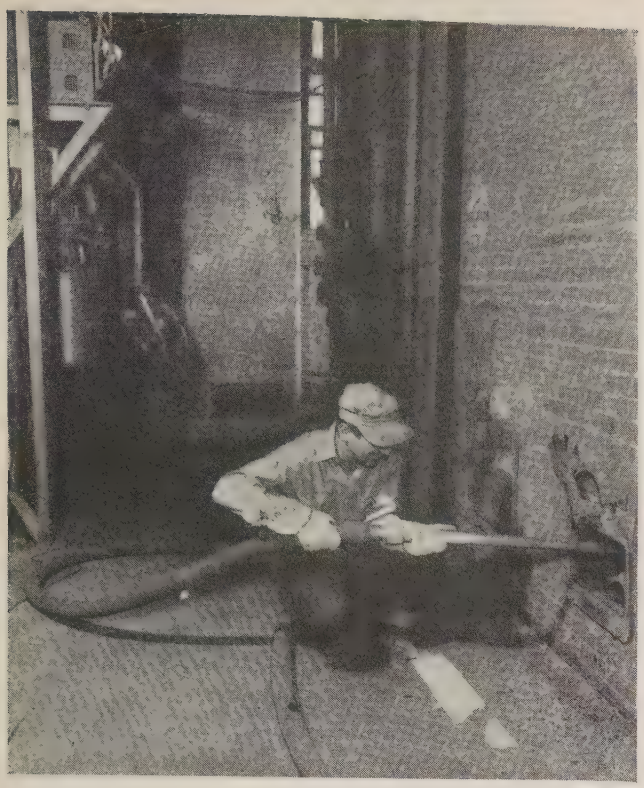
We have experienced many cases where an injured employee has failed to report to a first aid station and receive necessary medical treatment; either because he did not know that he should report every injury, or because he felt that his case did not merit medical treatment. In many cases these same employees have taken their injury to their own personal physician and have received treatment; then have asked the company to bear the cost of this treatment.

We have found that by complete investigation of all cases, particularly those of the last mentioned variety, we have assisted in determining whether or not an employee was actually injured while in the plant.

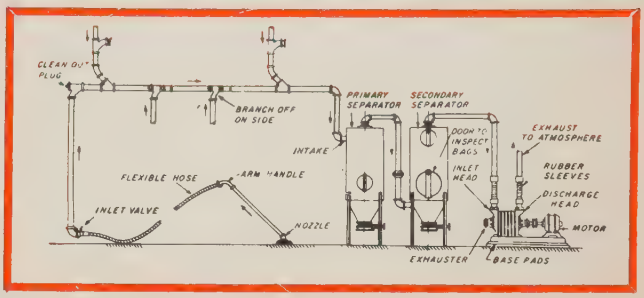
Reopened Cases

We have had many cases where an employee had received a minor injury and was treated by our medical division. The cases have been considered closed, but several months later were reopened and claims made by the employee upon the company for medical treatment. Because of the thorough and complete investigation conducted by the safety investigator the history of the

(Continued on page 38)



Workman recovers coal from wind boxes in one third of time required by old method. Hose connects to central vacuum system which also is used to remove fly ash and clean up.



THIS CENTRAL VACUUM SYSTEM . . .

✓ Recovers Coal

✓ Removes Fly Ash

✓ Cleans Up Quickly

BY USING AN INDUSTRIAL VERSION of the household vacuum cleaner power plant engineers at Clifton Paperboard Company have cut hours each week from the usually laborious and time-consuming job of recovering unused coal from their boilers. Their central vacuum system does double duty by cleaning fly ash from the boilers—in less than half the time formerly needed.

The plant operates 4 large boilers (total 3300 hp), which are fired with coal fed from hoppers on to chain grate stokers. During the course of a week, 2 to 3 tons of fine coal slip through the 21-foot wide chain grates and collect in the wind box. About once a week the coal is recovered from the wind box; ashes from the fire bed fall into another section of the boiler.

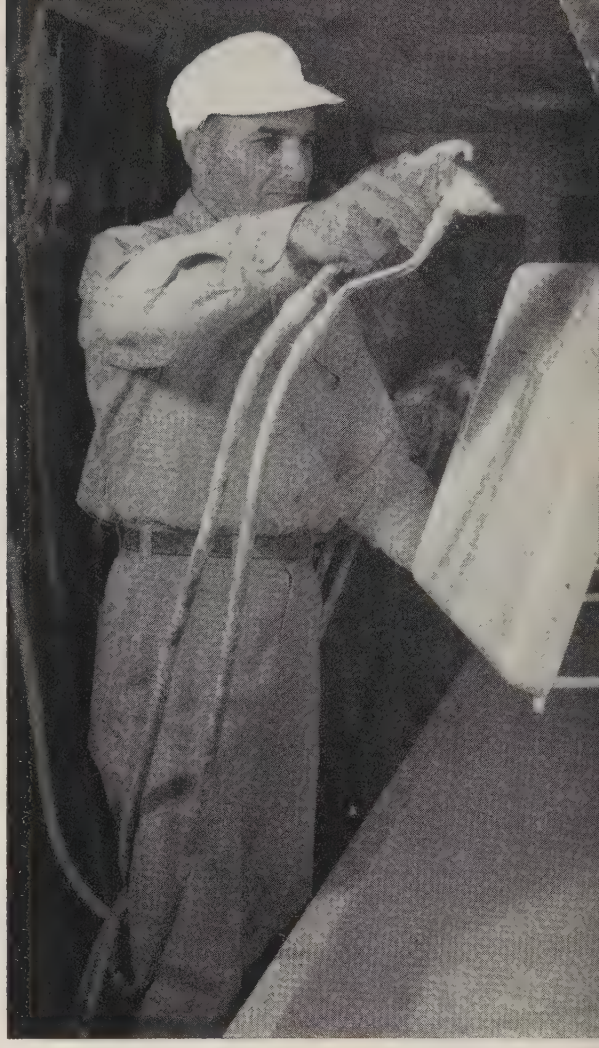
Formerly, the coal was recovered by using a long handled hoe to scrape the coal from the wind box out on to the boiler room floor. Because of the 4-to-9 foot clearance between the boiler housing and the building wall, the 16-foot hoe handle was constructed in several sections connected by threaded joints. This meant that each time the hoe was pulled out of the wind box, the handle had to be partially dismantled, and then reassembled to reach into the boiler again. The recovered coal would be shoveled into a wheelbarrow and taken, one load at a time, to the coal yard where it would eventually be shoveled into a coal elevator for return to the hoppers. As a result, 6 men spent nearly a full day each week to remove the coal from the 31 wind boxes and return it to the feed hoppers.

The company now has in its boiler room a central vacuum cleaning unit to take over the job of coal recovery. Now the process not only is cleaner and more convenient, but also saves time in amounts well worth reckoning. The job that once took 48 man-hours is now accomplished by 3 men in 5 to 6 hours, a labor saving of better than 60 percent.

How It Works

Here's how the system works. A vacuum (9 inch mercury) is created by a 790-cfm blower, and is carried in a 5-inch diameter pipe to various locations in the boiler room. Hinged caps in the pipe enable workers to connect a flexible-hose-and-nozzle assembly into the vacuum virtually anywhere in the boiler room. A pair of hoppers is installed on the vacuum side of the ex-

(Continued on page 40)



In protected spray booth and armed with modern spray gun, painter applies coat of new detergent-resistant enamel to washing machine top made of glass fiber.

By R. T. UBBEN
Technical Coordinator, Paint Division
Pittsburgh Plate Glass Company
Pittsburgh, Pennsylvania

BUILDING & EQUIPMENT MAINTENANCE SERIES
more articles in February & March

PROGRESS IN PROTECTIVE

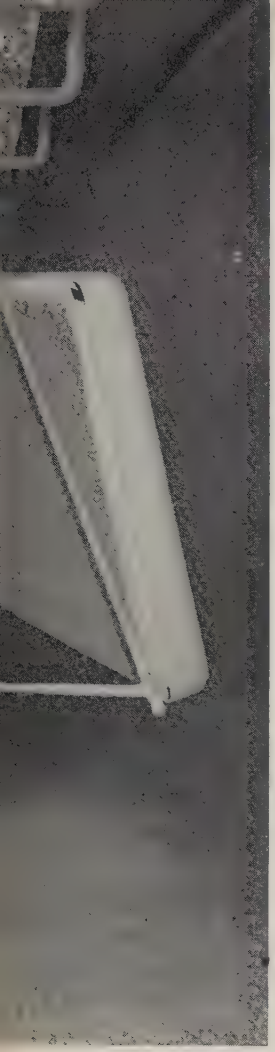
Since the close of World War II the real impact of chemical progress has made itself felt upon the protective coatings industry. Substantial improvements have been made in many prewar coatings.

Alkyd resins, for example, are being used more extensively for many types of coatings where advantage is being taken of improvements in color, drying time, durability, etc. A host of new chemicals, which can be adapted to the alkyd resin reaction, is being used to upgrade the quality of alkyds. Refinement in the manufacture of fatty acids results in improved film properties of the alkyds in which they are used. Styrenation of alkyds has resulted in a completely new concept of "quick drying enamels," which are not only faster drying but, also possess excellent wearability.

One of the specific fields of finishing where very real progress has been made is the finishing of appliances. The advent and almost universal usage of soapless detergents, which have a much more stringent effect on organic coatings than previous soaps, make it necessary that enamel finishes for machines and other areas which are cleaned in this way be made to withstand these new washing compounds.

Improvements in alkyd resins and in their compatibility with urea and melamine resins were very helpful in this direction, but it was the development and commercial production of a new class of epoxy type resins that made possible the development of satisfactory coatings. It is true that this successful application of epon resins in coatings for appliances has led to their use in other types of coatings. Epons, when properly formulated and cured, produce films of exceptional and unique resistance to many corrosive and hydrolytic agents. They are particularly useful in baked primers where their slight tendency toward yellowing is not too objectionable. Catalyzed or air-cured epon finishes are finding increasing application as maintenance paints in chemical and industrial plants, but it must be stated that air-cured or catalyzed epon finishes do not possess the outstanding properties which characterize the baked films.

Somewhat of a revolution in the protective coating industry has taken place in the past few years with the development of water-thinned or latex paints for maintenance uses. Most water-thinned paints are based on synthetic rubber emulsions which



BELOW—top—Metal furniture parts are being dip-coated in this picture with a special enamel which resists scratches.

BELOW—center—Coating machine operator removes tube and places another on bar which comes in contact with paint roll. Enamel-coating is then baked on finished tubes. Other paints can be applied later.

BELOW—bottom—Metal file boxes move along through paint spray booth in assembly-line fashion. Enamel is then baked on for solid finish. Note good lighting and ventilation, making otherwise dangerous operations safe.

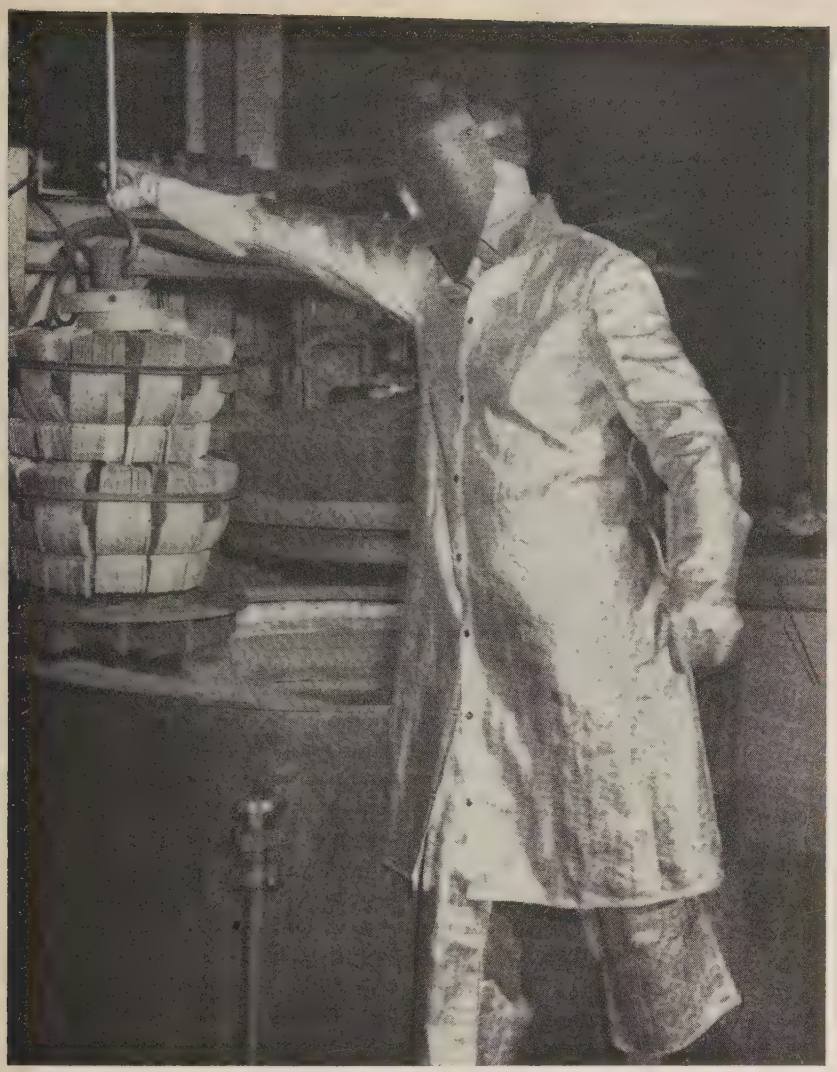
PAINTS

were developed during World War II and have replaced a fair percentage of oil and varnish type paint for interior wall finishing. The "do-it-yourself" movement has aided the popularity of these odorless, easy-to-apply and easy-to-clean-up-after wall paints, and the black mark which formerly attached itself to "water paints" has completely disappeared. One must even recognize the possible spread of water-thinned finishes for other applications. For example, their use as exterior finishes for masonry is expanding on the West Coast and in Florida and some industrial applications are being developed.

The advent of each new or distinctive development invariably stimulates efforts toward improvement of

(Continued on page 30)

ALUMINIZED CLOTHING.



PROTECTIVE CLOTHING SERIES
next article in February

LEFT—Workman removes cherry-red processed castings from annealing furnace. With visor protected face and reflecting aluminized clothing he is able to stand the heat. Light weight of clothing also adds comfort to his "summer" job.

OPPOSITE PAGE—Garbed in aluminized clothing from gloves and hat to pants and coat, this man is reaching over an annealing furnace which is red hot, yet he says job is cool with light new clothing.

To Give Heat the Bounce!

A PROBLEM AS OLD AS the blast furnace is that of protecting men against extreme heat on the job. Without adequate protection, they cannot get close enough to their work to perform their tasks effectively and safely. And the problem of selecting the right protective clothing, and getting the men to wear it, is at least as old as the safety engineer, and one of his biggest headaches.

Both of these problems are related closely to the development of better protective devices and materials with which to make them.

The standard solution to the heat protection problem has been the use of asbestos clothing, often with a wool backing, to prevent burns and the debilitating effects of heat. This type of clothing has worked within the limits of the material with which it is made.

Asbestos, being practically fireproof, prevents burns in many instances, provided it is thick enough. It is also a fairly heavy material, so that a garment made from it must also be fairly heavy to serve its purpose. However, it is a conductor of heat, with the result that a man wearing it is safe against burns but is not insulated against heat. For long exposures to heat, therefore, an insulative backing is necessary. That means still more weight.

This leads to another problem in actual practice: Men provided with heavy safety clothing will occasionally take a chance on not wearing it.

The Search

Safety men have long looked for a type of garment with an outer coating of reflective material which could throw back the heat. This

way, protective clothing could be thinner and lighter in weight. It would not have to be as highly insulative, since heat would not penetrate into and through the cloth to as great a degree. It is known that aluminum reflects 90 percent of radiated heat. If it could be utilized in protective clothing, it could provide the ideal solution to the problem, safety men reasoned.

Many attempts have been made, both by safety clothing manufacturers and safety engineers in the field. Spraying conventional-type garments with aluminum paint gave some added protection, but this method proved unsatisfactory and was abandoned.

Attempts were also made to bond a layer of aluminum to cloth under heat and pressure. Results were much better than with the sprayed paint, but the metallic layer was thick, the fabric stiff, and still too heavy. This fabric also breaks down under working conditions.

But a method was finally found in which the aluminum is deposited on the fabric in a very thin layer and securely bonded. Garments made of it give better protection than the conventional type, are lighter by half, and are readily flexible. They also last longer and are more resistant to wear by abrasion. Under conditions where other types of clothing normally last from 3 to 4 weeks, aluminized garments last up to 6 weeks.

How much more resistant to heat this cloth is over non-aluminized cloth is shown in the accompanying chart. The temperature behind aluminized asbestos exposed to a given level of heat begins to level off at the same time as the untreated cloth, but about 200 degrees lower. In the case of cotton duck, the leveling off time for the treated fabric occurs at about the same time as the untreated cloth ignites.

The chart also shows that aluminized duck is actually more resistant to heat than the aluminized asbestos cloth. As mentioned previously, asbestos is a conductor of heat, and duck is much less so. The superiority of the aluminized duck in reflecting and protecting against heat makes it entirely adequate for jobs where radiant heat alone is the problem. But where there is a risk of spatter from molten metal, the protection of asbestos is essential.

Aluminized clothing is still a fairly recent development, and has been produced in quantity for only a short time. It cannot yet be judged on a long term basis, but initial results have been impressive. In slagging operations, coking, and the handling of white-hot ingots it has effected some startling economies. In most operations where the heat is so intense that two men must take turns to do a single operation, spelling each other when the heat becomes too intense for conventional heat protection equipment, one man with aluminized clothing can stay long enough to complete the operation alone. Also, in unusual circumstances when an obstacle is encountered that prolongs exposure to heat, a man wearing aluminized clothing can stay for far longer periods without losing time to cool off before the job is finished.

Workers, when first introduced to aluminized garments, are usually skeptical. They are not convinced that clothing which weighs half as much as what they are used to will protect them. But experience proves that they accept with confidence after the first trial, and are sold on both the safety and also the comfort and freedom of movement afforded.

Picture, chart and text material in cooperation with American Optical Co.

ALUMINIZED FABRIC VERSUS PLAIN FABRIC

critical observations of fabric conditions on exposure at various temperatures

(MAXIMUM EXPOSURE: 600 SEC.)

OBSERVATION CODE

A—No visible change
B—Scorch—discoloration
C—Slight Char—weakened
D—Char—blackened—no strength
E—Char—Glow and hole opened
F—Open flame

SECONDS EXPOSURE & OBSERVATION AT VARIOUS TEMPERATURES

Fabric placed 4 inches from heat source. Source Temperature—°F

	1500°	1800°	2000°	2200°	2400°	2600°	2800°	3000°
FABRIC								
2# Herringbone Asbestos								
ALUMINIZED	600A	600A	600A	600B	600C	300C	60E	45E
PLAIN	300B	60C	30C	20C	15C	5F	4F	—
10-Ounce Cotton Duck (flameproofed)								
ALUMINIZED	600A	600B	600B	90C	55E	30E	25E	22E
PLAIN	90E	70E	22E	12F	8F	4F	—	—

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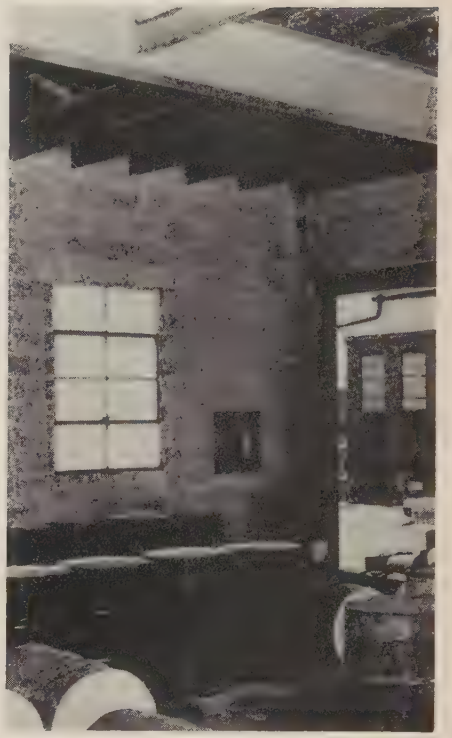
(For details, use Key # A-12 on card on page 71)

HAZEL CAME . . .

THE ROOF WENT . . .

BUT THE WINDOWS STAYED!

AFTER—The hurricane has struck and ripped the roof off this plant building—but the window is still intact. In fact, even windows hurled many feet stayed unbroken.

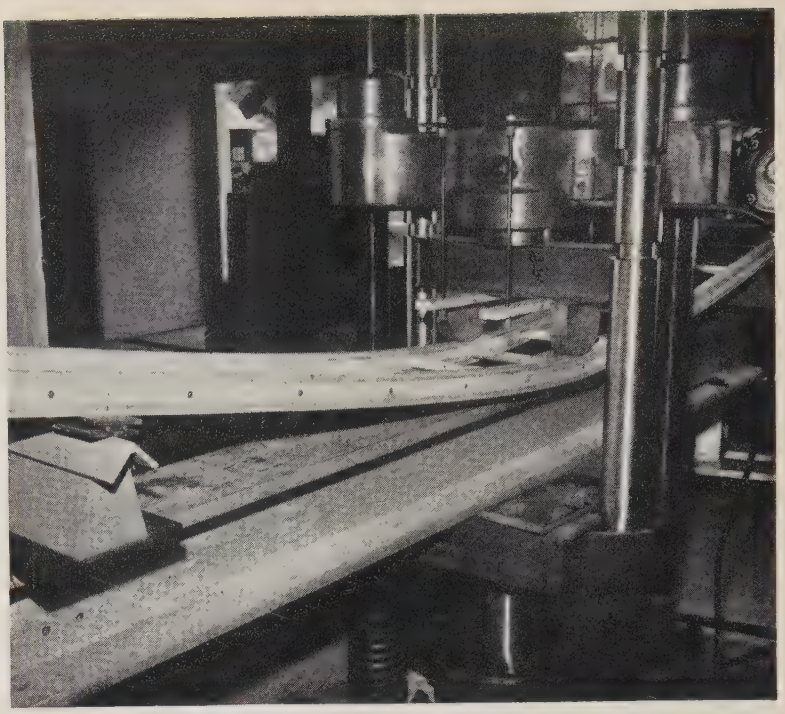


BEFORE—Acrylic plastic window throws light into plant building. Roof is firmly in place.

IT MAY BE SMALL comfort to the Keystone Refining Company, but when hurricane Hazel hit their Philadelphia plant a few months ago, it proved one thing—their acrylic plastic windows stood up to the big wind without loss of a pane. Small comfort, we say, because the plant walls and roof didn't fare so well. As you can see in the pictures above, parts of the roof were blown off and the walls suffered also. The hurricane, instead of blowing out the windows from the walls, reversed the process and blew the walls from around the windows!

Of course, it must be admitted that one pane was lost when part

(Continued on page 32)



Picture shows testing machine applying pressure to laminated ladder which is still bending without any sudden shearing.

By H. L. VON HOHENLEITEN
Senior Engineer
Consolidated Gas Electric Light and Power Company
Baltimore, Maryland
NORVELLE G. HUNDLEY
Timber Engineering Company
Washington, D. C.
FREDERIC C. JAY
Vice President, General Manager
Engineering & Laminating Corp.
Baltimore, Maryland

WHAT DO WE KNOW ABOUT

CONSTANT IMPROVEMENTS are being sought in wood ladders. When a ladder is in use it generally means that a human being is entrusting himself to its support far above ground. The danger of a serious injury from a fall is such that ladders must have the highest safety factor possible.

Metal ladders as well as wooden ladders have their place in industry, transportation, and commerce, but the problem of improving wooden ladders has been that of imparting additional strength and safety while maintaining the desirable properties of wood and keeping the weight practically constant. With recent improvements in glue laminating techniques and past research on composite or sandwich construction, a recent solution to the problem appears to researchers to be the use of several varieties of wood together in ladder rails. Recent laboratory tests of ladder rails made of various combinations of woods seem to indicate that laminated composite beams, especially those of more than two species of wood, are superior to solid beams for industrial ladder rails.

Reason for Tests

The reason for these tests with laminated wood ladders is that, while wood has several inherent properties which make it one of the most satisfactory and safest of materials for ladder construction, it has two weaknesses which need correction: solid wood rail ladders have comparatively greater weight and a tendency to fail suddenly and unexpectedly under apparently normal service conditions. Some of the outstanding qualities of wooden ladders, on the other hand, are: (a) low cost; (b) great impact strength; (c) comparatively little tendency to sway, especially important in the case of long ladders; (d) good electrical insulating properties, so ladders can be used with a reasonable degree of safety near electric lines; (e) strength properties not too greatly affected by varying degrees of temperature.

In combating wood's tendency to greater weight and sudden failure, the recent tests referred to above have found that composite beams which are fabricated with lighter wood centers exhibit a very high strength-weight ratio. According to these tests this is because the outer layers carry the major stresses both in tension and compression, while the weight is reduced to a minimum by the light central core.

Selecting the right type of wood to use in composite construction depends on several factors. The chief requisite of the face material is high strength and tension and compression parallel to the grain. The most important property of the core material is lightness, although a high shear strength parallel to the grain is desirable. Also, the two or more varieties of wood making up the composite should have as nearly similar shrinkage and swelling properties as possible, good gluing qualities and be readily available.

Consideration of these last factors lead to the selection of greenheart, true hickory, black walnut, and pecan-hickory as preferred face mate-

TABLE I

Weight and Strength of Solid Spruce and Composite Rail Ladders [1]

Type of ladder rail	Rails Thickness	Rails Depth	Total Weight of Ladder	Total Load to failure [2]	Modulus of Rupture
	Inches	Inches	Pounds	Pounds	Psi
Solid Spruce	1.5	4	40	1940	10,200
Solid Spruce	1.5	3 5/8	35	1580	10,200
Solid Spruce	1.5	3 5/16	30	1310	10,200
1/8" Greenheart Composite	1.5 [3]	3 5/8	40	2300	14,750
1/4" Greenheart Composite	1.5	3 7/8	44	3080	17,400
1/4" Greenheart Composite	1.5	3 5/8	42	2800	17,900
1/4" Greenheart Composite	1.5	3 5/16	40	2380	18,300
3/8" Hickory–1/8" Oak Composite	1.5	3 5/16	40	2240	17,100
3/8" Hickory–1/4" Oak Composite	1.5	3 5/8	44	2670	17,000
3/8" Hickory–1/4" Oak Composite	1.5	3 5/16	41	2250	17,200

[1] All computations based on the following:
(a) Wood at a moisture content of 12 percent
(b) Length of rails—14 feet
(c) Length of hickory rungs—14 inches
[2] Concentrated center load perpendicular to rungs over 14-foot span
[3] All composites consist of tension and compression flanges of thickness specified with Port Orford cedar core.

LAMINATED WOOD LADDERS?

rials, and Port Orford cedar and Sitka spruce as core materials, for the tests referred to above. In order to reduce the abrupt change in strength between the outside faces and core materials of the ladder rails, inherent in combinations of two varieties of wood, rails were made with a third variety of wood of intermediate strength between the core and face woods. The tests subsequently showed that this technique prevented sudden ladder failure.

First the Theory

Researchers determined the theoretical weight and strength of ladders with solid spruce rails as well as of ladders with composite rails of various combinations of greenheart-Port Orford cedar and hickory-red oak-Port Orford cedar. The solid spruce rails were used simply as a yardstick to measure the performance of the laminated rails. The results of these computations are shown in Table I. As shown in the table, hickory-oak Port Orford cedar composites carry about 15 percent, and 1/8 inch greenheart-Port Orford cedar composites about 19 percent more load than perfectly clear and straight grained solid beam ladders of equal weight. On the basis of equal dimensions, however, the hickory-oak composites carry about 42 percent, and the 1/8 inch greenheart composites about 45 percent more load.

In using laminated wood ladders a problem is raised by the fact that industrial ladders see all kinds of service and storing, including occasional high temperature in the case of fire ladders. This makes waterproof and durable wood glue necessary in ladder construction. Laminated ladders tested in these investigations were made with phenol-resorcinol-formaldehyde adhesive. This type of adhesive produces glue bonds of extreme durability, which tests have shown will withstand prolonged exposure to cold or hot water, alternate wetting and drying, and exposure to alternating humidity changes. It is also inert to heat at temperatures well above those at which wood chars.

Static bending tests were performed on the solid beam and composite beam ladder rails to test the reliability of the estimates made in Table I. The results of these tests, when adjusted for the greater moisture content of the test specimens and the fact that the theoretical determinations did not account for the imperfections found in the larger test beams, confirmed the theoretical estimates shown in Table I.

Then Strength Tests

The test results also showed that while solid spruce rails failed suddenly and completely in brash horizontal shear without giving the slightest warning, ladders with greenheart composite rails carried their maximum load for a short period and gave at least one sound warning shortly before failure occurred.

The hickory-oak-cedar composite ladders gave several loud sound warnings near the ultimate load and continued to carry load after initial failure for a long period of time. In some instances, additional load

was taken up even after sound warnings gave evidence of initial failure. Composites in which Sitka spruce was used as core material failed more abruptly than those in which Port Orford cedar was used. In these composites, the major type of failure was brash horizontal shear.

The tests indicated to researchers that ladders made with composite rails were superior to ladders with solid beam rails: (a) in strength: (b) in stiffness: (c) in higher strength-weight ratios. In addition they show other excellent qualities such as: (a) an ability to absorb more work to failure: (b) an ability to carry large loads for long periods beyond initial failure: (c) an ability to give distinct sound warnings as failure progressed gradually: and, (d) a freedom from horizontal shear failure, which is the usual cause of complete destruction in other types of wood beams.

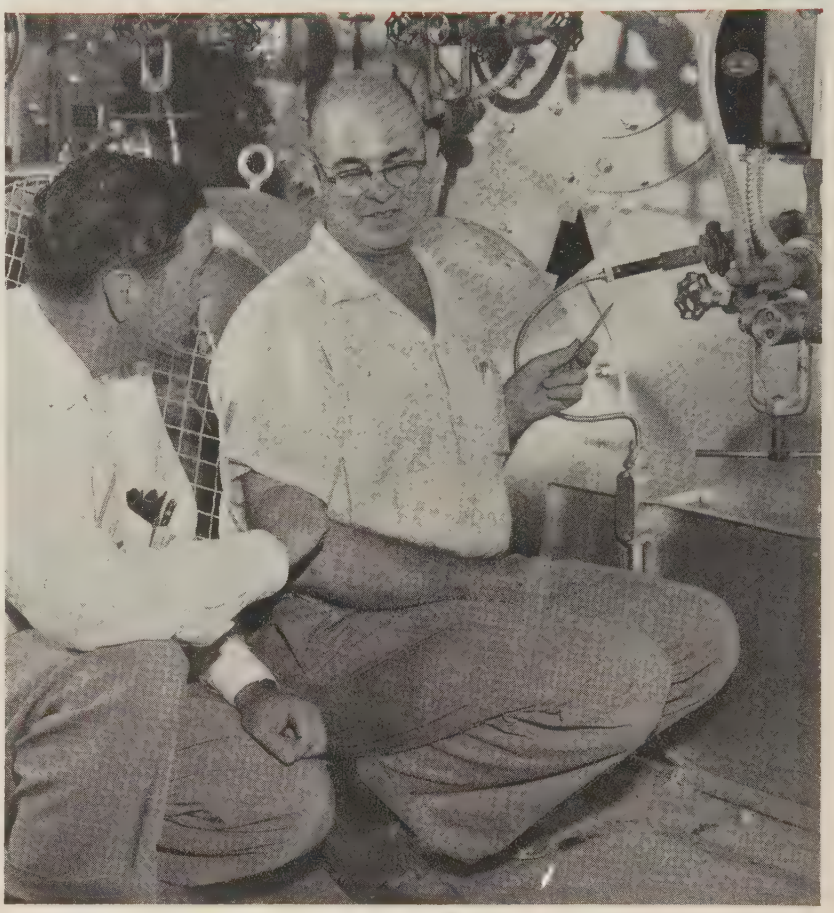
Previous studies have indicated that unexpected ladder failure occurs in most cases because of invisible compression failures present before the ladders were finally broken. The composite laminated wood ladders produce progressive tension failures which, since they show splintered wood fibers, are easily recognized by the layman in contrast to compression failures which may be easily overlooked. The three-wood-varieties type of laminated composite rails appears to be especially well suited for industrial ladder use because, in case of failure, a man working on one is not suddenly deprived of his support and has enough time to get off the ladder before it breaks completely.

More Research in Progress

Of course, it is not intended to imply that the combinations of different types of wood and the respective thicknesses in laminated ladders used in these tests represent the best in composite ladder construction. Further work to determine the merits of other combinations is still being carried on.

Picture and chart by courtesy of Engineering and Laminating Corp.

"Safety Maintenance" Salutes A SAFETY IDEA



"Two-Eyed" Control Replaces Electric Eye

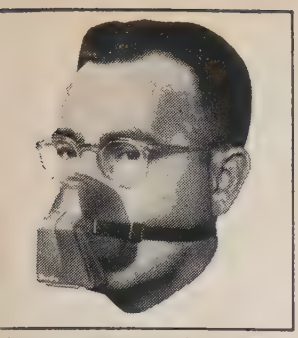
AN AUTOMATIC SAFETY control so modern it makes photoelectric cells old-fashioned is part of a new boiler installation completed recently at the Falstaff Brewing Corporation's Omaha plant.

Nick-named "scanner," the new safety shut-off control contains selenium sulfide, a highly sensitive metal compound which is "two eyed" in that it can "see" either gas or oil flames, according to Fred H. Drehsen, chief engineer at the plant. If, for any reason, the flame in the boiler is extinguished, the safety control automatically shuts off the fuel supply. The firm's boilers can be operated on either gas or oil but during severe winter weather, when more gas is needed for residential heating, the firm uses oil.

Formerly separate shut-off controls were needed for both fuels. A sensitive thermocouple, which occasionally had to be replaced, monitored the less luminous gas flame, and photoelectric cells had to be used to observe the oil flame. Now, however, the selenium sulphide compound makes the single control "two-eyed."

Among other safety features on the new plant boiler are other automatic controls which shut off the fuel supply in case of either excessive pressure or low water supply.

Picture by courtesy of Falstaff Brewing Corp.



*M.S.A. DUSTFOE #55—Lightweight breathing protection against dusts not significantly more toxic than lead.

*M.S.A. COMFO METAL FUME—Effective protection against harmful fumes from molten or heated metals.

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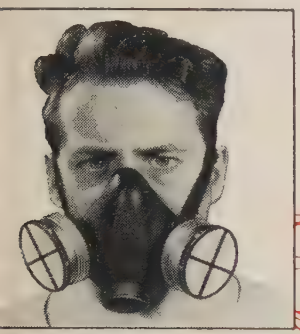
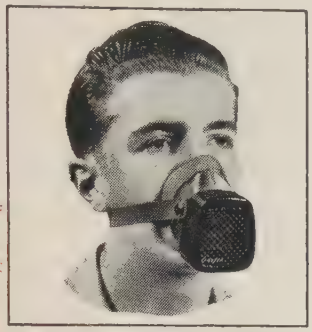
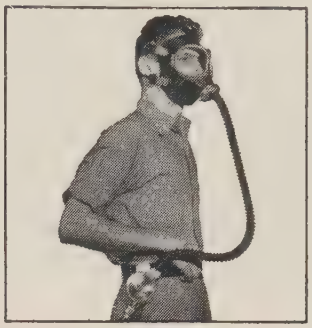


*M.S.A. COMFO CHEMICAL CARTRIDGE—For light concentrations of gaseous matter; particulate matter with filter.

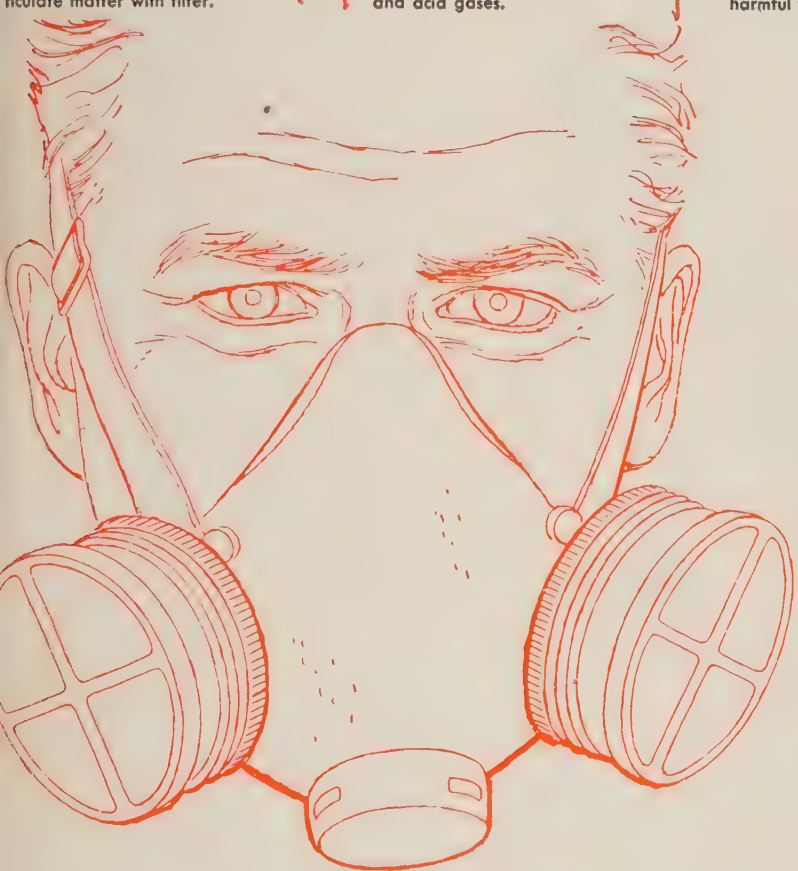


M.S.A. GASFOE—Chemical cartridge protection against light concentrations of organic vapors, and acid gases.



*M.S.A. AIR LINE—Complete, versatile protection in any atmosphere that is not immediately harmful to life.

M.S.A. PROTECTIVE HOODS—A variety of dust and paint hoods made of Dynel cloth or Vinyl plastic.



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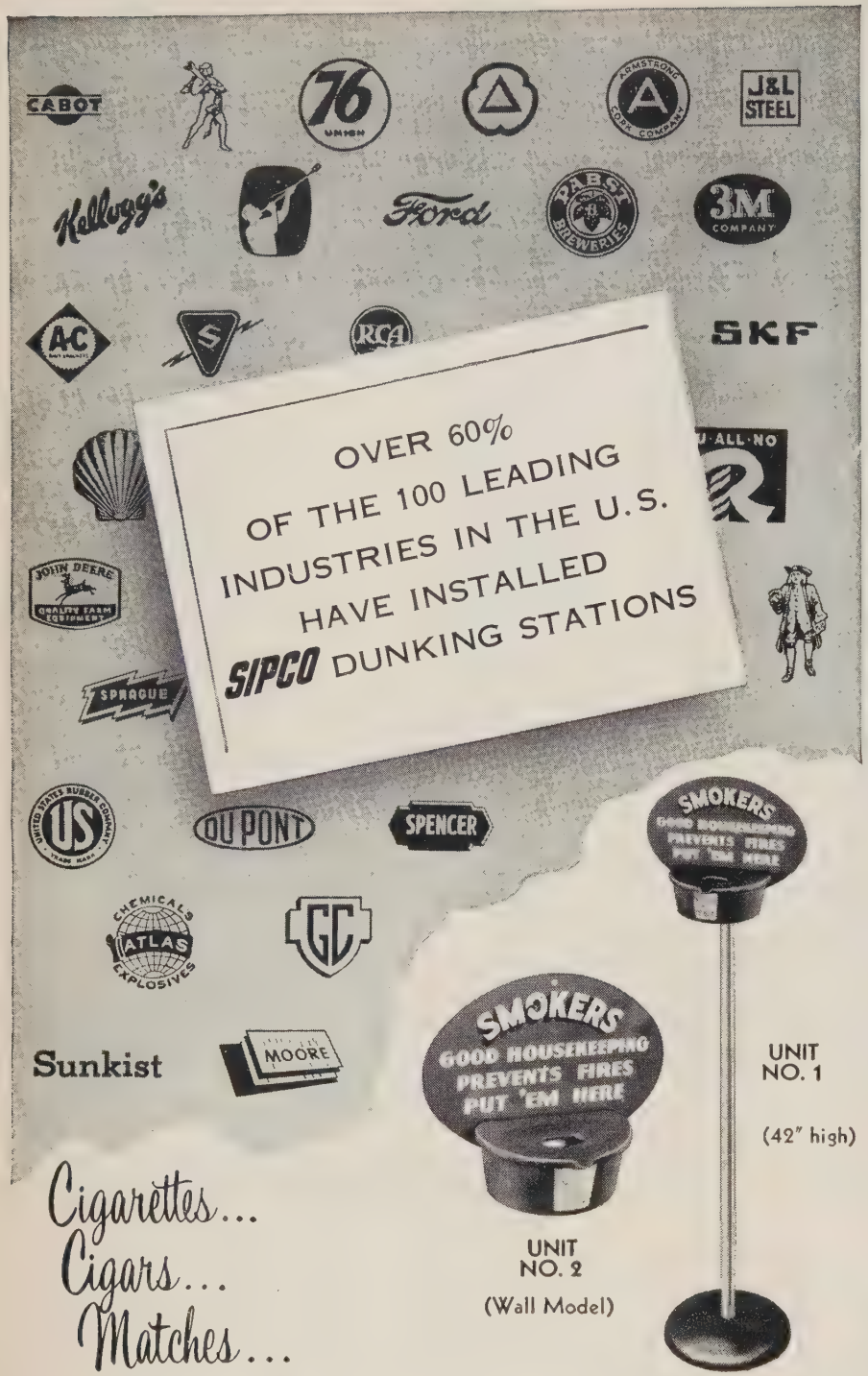
(For details, use Key # A-13 on card on page 71)



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It's not the cigarette or cigar that's being smoked that causes fires — it's after they're discarded and forgotten that they become a serious fire hazard! SIPCO DUNKING STATIONS end this fire hazard by immediately drowning every last dangerous spark.

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116 SO. GARFIELD AVE. PEORIA, ILLINOIS

(For details, use Key # A-14 on card on page 71)

Safety, Production and Economics

THE ECONOMIC well-being of employees is inseparable from that of management and full understanding of this fact is vital to the strength of the nation, according to Emile F. du Pont, director of the Employee Relations Department of the Du Pont Company.

Speaking at the 27th Maine State Safety Conference, he pointed out that the industrial safety campaign has been successful because management has been able to demonstrate a mutual interest in the physical welfare of employees. The mutual interest in the economic sphere may not be as apparent at first glance and "this is where understanding is needed in industry." The outstanding improvement in industrial safety is an example of what can be accomplished through cooperation of management and workers, Mr. du Pont said. At the same time, he reported, a recent survey indicated that while most employees feel they can depend on management to make working conditions as safe as possible, only a minority believe management is interested in their economic welfare.

A National Problem

"It seems vital to me that we who are in management develop better ways of explaining business," he said. This is a national problem which must be tackled by management everywhere, with each plant in each community taking the initiative to create understanding among their own people, for understanding begins at home.

It may be more difficult to demonstrate the mutuality of interest in the economic sphere, Mr. du Pont said. "Certainly the self interest of the worker in the profitable operations of his company may not seem so apparent at first glance as his self interest in better safety. Yet even where management and employees disagree over how the rewards of production should be shared, it should be obvious that

greater production would provide larger shares for all concerned. For it is increased production, resulting from tools and machinery which increase individual productivity, that gives us our higher standard of living."

Reviewing the record of accomplishment in industrial safety, Mr. du Pont said that "the safety movement, instead of basking in the glow of past accomplishments, must be pursued even more vigorously." Although the 1953 death rate from accidents, 60 per 100,000 population, was the lowest on record, he cited a toll in the United States that year of 95,000 lives and 9,600,000 injuries. "The time lost by workers from accidents of all kinds," he said, "was equal to a year's shutdown of industrial plants employing 1,100,000 men and women. In other words, it was the equivalent of removing from production all the plants of General Motors, Ford, Chrysler, and the United States Steel Corporation. It is estimated that 1953 accidents cost our economy more than $9 billion, representing nearly one quarter of our budget for national defense. This is a staggering loss of manpower and resources, especially in a period regarded by our national leaders as one of the most critical in our country's history."

Suggesting that safety records may be further improved, Mr. du Pont said that nearly two-thirds of all industrial accidents occur in companies with fewer than 100 employees. These companies, he said, have an accident frequency rate more than double that of the larger companies, and appear to be "a fruitful area for improving our performance." Also, he suggested improvement in off-the-job safety. "In analyzing the safety of Du Pont employees for the year 1953," he said, "we found that they suffered 11 times as many injuries at home or at play as at work. Yet, and this is important, our employees are three times safer off the job than the national average. The reason seems obvious. Safe habits at work, and an awareness of their value to the individual, instinctively lead to safer habits elsewhere."

Edmont Case No. 529: Handling racks to and from plating tanks. Unsupported rubber gloves were replaced with Edmont gauntlets coated with Neox (reinforced neoprene). User's report: "Best gloves ever used, outlasting gloves previously used many times."

Job-fitted gloves wear longer, save up to 70%

No. 366—Coated with Durox, a 50% longer wearing plastic.

No. 924—Coated with Neox, chemical and wear resistant.

With Edmont gloves, job-fitted for the application, you get maximum protection against hand injuries and cost savings averaging 40% to 70% through longer wear.

In handling sharp, abrasive or slippery materials, or where chemicals, grease or heat are present, modern Edmont gloves made of coated fabric have widely replaced canvas, leather and unlined rubber gloves. Their coatings far exceed these older materials in resistance to acids, caustics, solvents, snagging and cutting action, abrasion and other conditions. They also provide safer, surer handling, and result in improved employee morale.

Edmont Case No. 419: Working in acids and strong solvents. Job-fitted gloves coated with Neox outwore rubber coated gloves more than 4 to 1.

Edmont Case No. 207: Handling sharp-edged metal products in plating solution, Edmont gloves reduced hand injuries 78%. Also saved 6c per man-hour on cost of glove replacements.

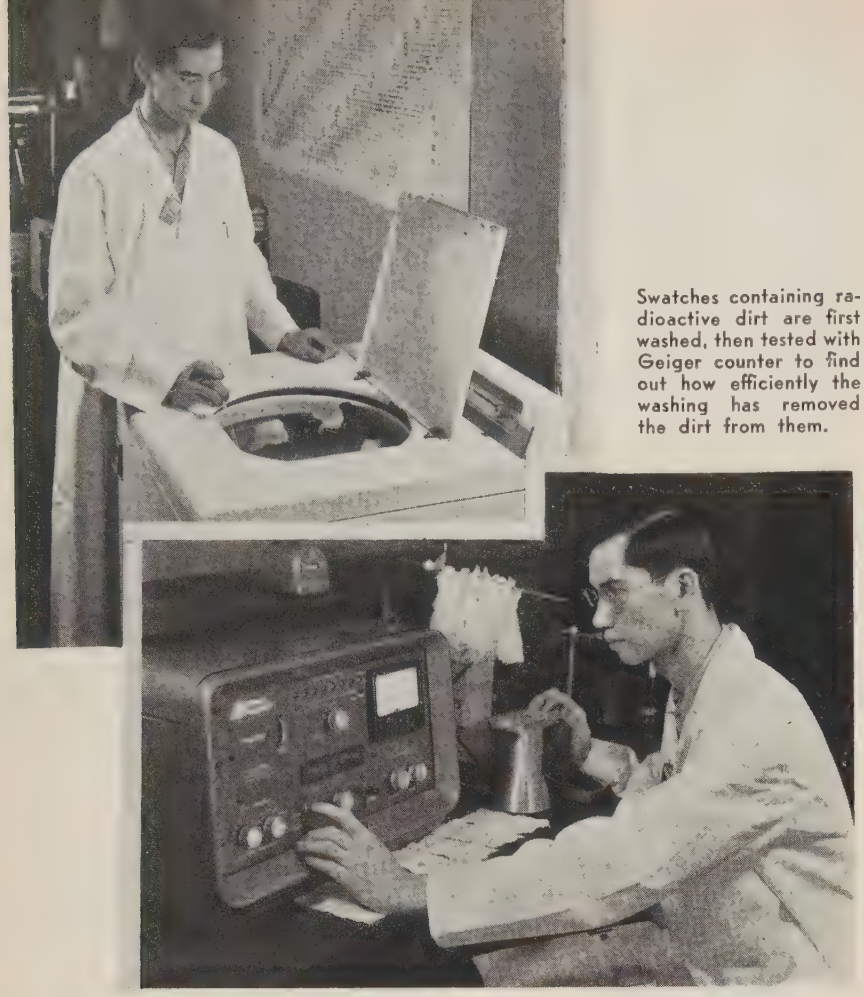
Free Test Offer to Employers: Edmont's laboratories have developed and test-rated over 50 types of palm-coated or fully-coated gloves to fit different job conditions. Send description of your operation, materials handled and temperature condition. We will recommend the glove that best fits your application and forward samples free of cost for testing on the job.

Edmont Manufacturing Company, 1256 Walnut Street, Coshocton, Ohio

World's largest maker of coated industrial gloves, available through leading industrial suppliers.

Edmont job-fitted gloves

(For details, use Key # A-15 on card on page 71)



Swatches containing radioactive dirt are first washed, then tested with Geiger counter to find out how efficiently the washing has removed the dirt from them.

Radioactive "Dirt" Tests Cleaning Methods

RADIOACTIVE DIRT is now being used routinely by a number of companies to determine the amount of soil or dirt removed from fabrics under various cleaning conditions. Because this new method permits more accurate evaluation of washing efficiency with a minimum of effort, this bids to become the first test method based on radioactivity to be adopted as an industrial standard.

The method is of particular interest to companies manufacturing equipment and chemicals for cleaning purposes as well as laundries and dry cleaning plants.

Simple and Reliable

The testing equipment is simple and reliable, according to the manufacturer. Three kinds of standard test swatches are made available, each containing a spot of radioactive dirt. The radioactivity is in the form of Carbon-14 tagged protein, carbon black or fat. The measurement of the radioactivity in a special "Soil-O-Cator" Geiger counter after washing, compared with the same measurement made before washing, shows the extent of soil removal in the cleaning operation. The measurements may be made by relatively unskilled personnel.

Not Dangerous

The instrumentation and swatches may be obtained without AEC authorization and may be handled without undue safety precautions, since the radioactivity of each swatch is low and non-penetrating. The long half-life of the isotope, C^{14}, and the non-ageing characteristics of the dirt make possible long storage of the swatches if necessary.

Pictures by courtesy of Nuclear Instrument and Chemical Corp.

Paint Progress

(from page 17)

existing type products and consequently odorless, alkyd and varnish substances have become available from which outstanding one coat non-penetrating wall paints have been made to equal latex paint.

Numerous other types of coating composition should be mentioned in any discussion of recent developments. Vinyl resins, for example, which have been on the market since the mid '30's and which were slow in developing volume usage, due in some degree to their high cost, continue to gain in popularity. Their present consumption is very large because of the diversification of usage. Among the developments which are contributing substantially to the increase of vinyl consumption is the organosol and plastisol type of coating which permit the deposit of heavier films in fewer coats. Chlorinated rubber and other rubber type polymers, phenolic resins, and many polymers and copolymers have found their niche and are being used in volume. The silicones, for which so much was predicted 10 years ago, have so far failed to gain the broad usage that was predicted for them. The high cost of silicone resins limits their application in the coatings field to specific uses where their outstanding heat resistance is usable.

All of these developments point to the unavoidable observation that the paint, varnish, and protective coatings industry is drifting farther and farther away from the use of natural products. Outside house paints still depend on linseed and other vegetable oils but the use of these old stand-bys is diminishing even for this purpose. Chemists have found that better paints can be made with less oil than was thought to be necessary before World War II and this may still be reduced if current experimental work on exterior latex and alkyd paints proves successful. The old days of dependence upon imported china wood oil and natural gum as the basic raw materials for the paint industry are over. Chemistry has changed that.

Pictures by courtesy of Pittsburgh Plate Glass Co.

"What's the Law?"

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Master Superior Court, New Jersey
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National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
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• • •

PROCEEDINGS FOR workmen's compensation were made by claimant who suffered from epilepsy and who, while experiencing a seizure, fell on the concrete floor of the plant, struck his head and suffered cerebral concussion. The Workmen's Compensation Division granted an award from which the employer appealed. The County Court, Law Division, 27 N. J. Super. 219, 98 A. 2d 715, reversed, and claimant appealed. The Superior Court, Appellate Division, 30 N. J. Super. 353, 104 A. 2d 720, affirmed the County Court; but there was a dissenting opinion and the claimant appealed to the Supreme Court as a matter of right.

The Supreme Court in an Opinion written by Justice Wachenfeld held that the concrete floor of the plant did not constitute a hazard of employment which contributed to the accident. Judgment of the County Court and of the Appellate Division were affirmed, denying compensation.

In its opinion the Court held: "An injury suffered during the course of employment does not per se entitle one to compensation, for it must also appear that the injury arose out of the employment."

"A physical seizure unrelated to the employment is not a compensable accident."

"A level, customary concrete floor is not a hazard or special condition of employment, within rule that whenever conditions attached to place of employment or otherwise incident to the employment are factors in the catastrophic combination the consequent injury arises out of the employment."

"Even though Workmen's Compensation Act is remedial in its nature, the Supreme Court will not usurp and trespass upon the legislative province and attempt to reach by judicial decree a result which

SAFETY
INDUSTRIAL FOOTWEAR
more comfort • less fatigue
fewer accidents
TOP NOTCH
Steel
SAFETY TOE CAP
INDUSTRIAL BOOT
With or without steeltoe, black ribbed leg boot with DURATEST non-skid design outsole.
WORKIN
Net lined all black 6" work shoe with non-skid DURATEST outsole. Steeltoe or plain.
BEACON FALLS RUBBER FOOTWEAR, BEACON FALLS, CONNECTICUT

(For details, use Key # A-16 on card on page 71)

Legislature has not provided for by legislative enactment."

"Injuries to compensation claimant, who suffered from epilepsy, and who experienced seizure, unrelated to his employment which caused him to fall on the concrete floor of the plant, strike his head, and suffer cerebral concussion, did not result by reason of an accident arising out of and during the course of the claimant's employment."

HENDERSON vs. CELANESE CORPORATION, Decided October 11th, 1954; New Jersey Supreme Court.

Independent Contractor or Employee?

Claimant sued for compensation benefits and an award was entered in his favor.

It appeared that the claimant owned his own truck and was doing trucking for the defendant. While operating the truck, it tipped over and he was injured. The defendant argued that the claimant was not an employee but was in fact an independent contractor and operated his own truck.

From the award of compensation the defendant appealed. On behalf of the claimant it had been argued that the statute enacted in 1930 which provided that "any person operating his own or his employer's motor vehicle with his employer's general authorization in the performance of work, in connection with the business affairs of the employer, shall be conclusively presumed to be an employee."

On appeal, the Court ruled that the 1930 Act did not apply in this situation but was intended to protect an employee who might be injured while driving his own vehicle in the course of his employment. Prior to the enactment of the above mentioned statute, one operating his own vehicle was deemed to be an independent contractor.

The Court further ruled that it was not the purpose of the statute to turn every driver of his own vehicle into an employee of every person for whom he does work. The decision was reversed and claim dismissed.

FERULLO'S CASE, Massachusetts Supreme Judicial Court, No. 11,309; September 24, 1954.

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BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
HELP KEEP THIS PLACE CLEAN
THINK ACCIDENTS ARE AVOIDABLE FORGET THE ALIBI.
EXIT
DANGER — NO — SMOKING
WARNING CURRENT —ON—
CAUTION KEEP AISLES CLEAR

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SATISFACTION GUARANTEED OR YOUR MONEY REFUNDED

(For details, use Key # A-17 on card on page 71)

The Windows Stayed

(Continued from page 23)

of a wall was blown through it. Up to that time not one cent had been spent on replacement of broken window panes since the installation of white translucent plastic glazing two years ago. Previously the company—which manufactures maintenance and industrial paints—faced a yearly replacement bill of about 400 dollars.

And Small Boys

The decision to make the changeover to plastic throughout its main plant was based on the company's successful experience with the material in a warehouse nearby. There the material had to confront another danger to windows—a children's

playground within a stone's or baseball's throw of the warehouse. Again the windows came through—resisting weather and showing no broken panes in 3 year's service.

With the installation of the new type of window in the company's main plant, employee morale has risen and cost has fallen. Because of the acrylic plastic's excellent light-diffusing properties, work areas are bright with daylight even on cloudy days; the need for electric lighting and the accompanying costs have been eliminated. Furthermore, the material's breakage resistance is also an important safety factor.

Space & Light

When the glazing in the main building was changed from glass to .125 inch plastic it was possible to brick up part of the old window openings to achieve two, seemingly conflicting, objectives. Much needed wall space from floor to window-sill was gained. But at the same time, the amount of effective daylight inside the plant increased. In shadowy areas around machinery and underneath shelving, the effect was particularly noticeable. In addition to diffusing light more evenly, the acrylic plastic has reduced sky glare to a minimum. An extra bonus accompanying the use of translucent glazing: employees are no longer distracted by a view of the outside traffic and events.

Breakage Solved

Formerly, company officials had been resigned to keeping basement windows permanently boarded up because of continual breakage from drums, trucks and general industrial traffic. Now they have bricked up the windows except for small plastic-glazed areas.

With the hurricane past, the company has attacked the damage done by the storm. As the roof goes back on and the walls are repaired, workmen will find the windows waiting for them—unharmed.

Pictures by courtesy of Rohm & Haas Co.

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Internal as well as External head protection achieved by patented "geodetic" suspension in New Willson Super-Tough® Hats and Caps.

Realizing that most fatal head injuries are due to shock to the brain rather than injury to the skull, the Cornell Aeronautical Laboratories designed and patented a new suspension system for industrial safety hats that provides maximum protection and comfort to the wearer.

This patented suspension is available only in Willson Super-Tough® Hats and Caps!

This suspension is made up of "geodetic" crown straps scientifically located to distribute the force of a blow over the entire head—not concentrate it in a small area on the crown of the head. In addition, the tough Fiberglas hat shell is made safer and more comfortable to wear by the pneumatic cushioned head band. This pneumatic cushion absorbs and distributes the force of lateral blows through a series of metered, interconnected air cells.

Write today for the new Willson Super-Tough® hat bulletin which describes in detail the "why and how" of these new Willson Super-Tough® hats with the advanced, patented suspension.

Clip and mail coupon for latest head safety information.

Please send me your bulletin on the new Willson Super-Tough® Hats and Caps with "geodetic" crown straps and "pneumatic" head band.

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(For details, use Key # A-18 on card on page 71)

KEEPING UP WITH...

Safety Developments In Materials Handling

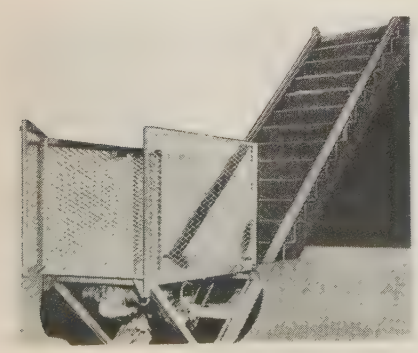
MATERIALS HANDLING SERIES
previous articles in November & December

STAIRWAY LIFT

THIS NEWLY designed Cargo Lift can be easily installed over any existing stairway or bolted to any side wall. It is a complete passenger or freight elevator equipped with all modern safety devices, and will operate on any available electric current.

The elevator comes in three standard sizes: 500, 1000, and 2000 pound capacities. Very little altering of the existing building is needed for installation. Stairway models require a small pit at the bottom of the stairway; trap-door or open types require only a hole cut in the top floor through which the elevator is to enter. All units stop automatically flush with the floor level, and in the "down" position do not interfere with normal stair usage.

For details, use Key # MH-10 on Inquiry Card on page 71.



EXHAUST SPARK MUFFLER

THE DEVELOPMENT of a Cyclone Muffler to capture carbon particles and eliminate the discharge of ignited solids in exhaust gases has been announced by The Yale & Towne Manufacturing Co. Centrifugal action is employed to throw solid particles into a collector. When installed on gas or diesel powered trucks, the cyclone muffler reduces the possibility that ignited exhaust particles will set combustible materials on fire. Factory Mutual approved, the muffler is of the dry type and does not require water or other servicing.

For details, use Key # MH-11 on Inquiry Card on page 71.

HOOK WITH SAFETY GATE

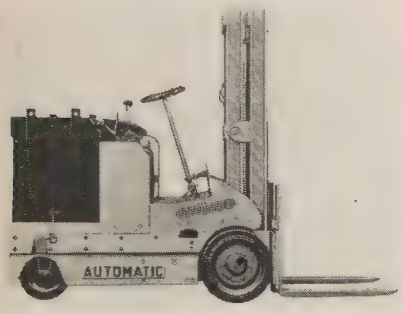
A HOOK WITH A Safety Gate which locks automatically and will not open unless the pin is manually depressed is but one of the guaranteed safety features of the new Bullard-Burnham Safety Hook. By making it impossible for the load to slip off, the new hook gives added protection to the men operating derricks, hoists and cranes.

The new design of the Safety Gate uses the hook shank as its operating base yet does not obstruct the throat of the hook. The rust proof gate, which can be adapted to fit all makes and sizes of standard hooks, opens and closes with ease in all types of

weather. It swings open horizontally on the shank axle so that even a full hook load will not snag in loading or unloading operations.

The Safety Hooks of the E. D. Bullard Co. are drop forged steel as supplied by established hook manufacturers. Component parts are Cadmium plated. Non-Corrosive Safety Gates are of brass and are available with or without return spring for automatic closing. Rust proof lock pins are of Duronze. The hooks are now available in sizes #2 to #16A. Hooks with greater weight capacities available on special order.

For details, use Key # MH-12 on Inquiry Card on page 71.



INDUSTRIAL TRUCKS FOR SEMI-HAZARDOUS LOCATIONS

A COMPLETE line of standard industrial trucks made by Automatic Transportation Co., is now listed by Underwriters' Laboratories for semi-hazardous operations involving unusual fire risks.

The industrial trucks carrying the UL's EE labels include three BF standard Skylift models with rated capacities of 2,000, 3,000, and 4,000 lbs.; and the LFS models, with rated capacities of 4,000, 5,000, and 6,000 lbs.; the operator-led electric Transporter, Transtacker, and Transtractor trucks. Transporters, both pallet and platform types, carry loads up to 6,000 pounds. Transtackers handle pallet or skid platforms to stack loads up to 5,000 pounds. Transtractors are designed to push or pull loads up to 20,000 pounds.

Typical locations in which type EE industrial trucks may be used, include: 1. Places where flammable volatile liquids, gases, or vapors

Stop dangerous handling of INDUSTRIAL LIQUIDS

You can stop dangerous handling of liquids and frequently reduce insurance costs in the process, by using Tokheim Transfer Pumps in maintenance work. Spilling, slopping, over-filling and dripping—constant enemies of safety—are easily prevented. Your plant can be kept cleaner. Work is speeded. Waste is halted. Accidents are prevented.

Business and industry are daily finding more uses for these rugged little Tokheim pumps. They are available with hose or spout outlets and other optional attachments. Pump operates on both forward and back strokes and is capable of delivering 20 gallons a minute. Will pump 'most anything that pours. Offered with alternate parts to handle special liquids. No plant should be without a battery of Tokheims.

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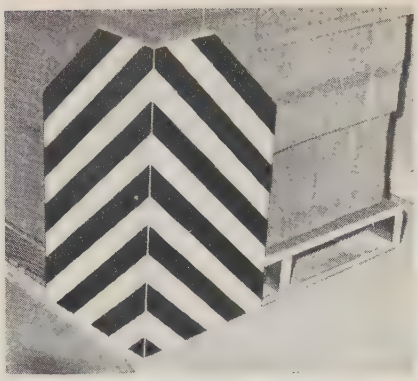
Gasoline Pumps and Accessories • Air and Liquid Dispensers • Specially Engineered Products

(For details, use Key # A-19 on card on page 71)

would become hazardous only in case of accident or in case of unusual operating conditions; 2. Locations where dangerous concentrations of suspended dust would not be likely, but where dust accumulations might form on or in the vicinity of electrical equipment; 3. Locations in which easily ignitable fibers or flyings are handled, manufactured, or used, such as textile manufacturing, cotton gins and cotton-seed mills, flax processing plants, clothing manufacturing plants, and woodworking plants.

A line of Automatic "explosion-resistant" HF model Skylift electric trucks (shown here) with rated carrying capacities of 2,000, 3,000, and 4,000 pounds previously was awarded Underwriters' EX label for use in hazardous locations (Class 1, Group D, Division 1) involving danger of fire or explosion.

For details, use Key # MH-13 on Inquiry Card on page 71.

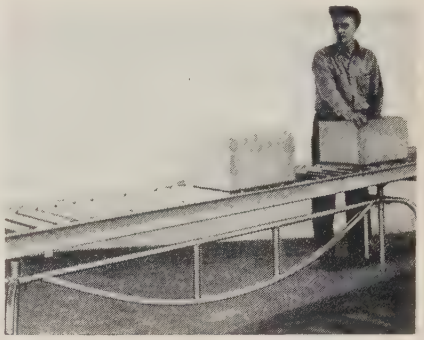


CORNER GUARD

LOADS CAN be protected against traffic damage at every corner with the new RAN-guard all-steel corner guard, manufactured by Randolph Industrial Equipment Co., a division of Northern Metal Products Co.

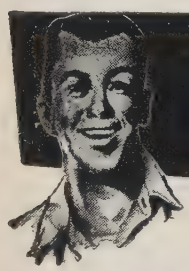
With its steel gusset slipped under the load (either on the floor or beneath the pallet), the guard helps to prevent accidents and load damage caused when lifts and trucks scrape the corner of a load. The colors of the guard are bold black and yellow baked enamel stripes, which conform to the safety color code and make the corners highly visible so there is less likelihood of their being struck. It can be used with all types of storage—on skids, pallets, floor, etc. Available in two sizes for various sized loads.

For details, use Key # MH-14 on Inquiry Card on page 71.



MAGNESIUM ROLLER CONVEYOR

INTRODUCTION OF A new, portable roller conveyor has been announced by Magline Inc. These new units are constructed entirely of magnesium and, according to the



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...FOR THE FOUNDRY

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Sizes—Small-Medium-Large.

SHOWER SANDALS

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No. 440 .....Perfect Rocker
No. 809 .....Perfect Rocker
No. 140 .....Platform Rocker
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Sizes—5 to 13 Incl. or small, medium, large, lightweight, sanitary protection.

They Insulate
They are Puncture proof

STRONG STEEL TOE

No. 504-S—Double duty for safety with this Reece "Perfect Rocker" Wooden Sole and Steel Toe Shoe . . . made with durable leather uppers.

Keeps the feet at body temperature regardless of room or floor conditions.

Sizes—5–13

Write for Complete Catalog

There is no substitute for Reece Wooden Soles

REECE WOODEN SOLE SHOE CO.

Dept. SM-1
(For details, use Key # A-20 on card on page 71)

Columbus, Nebraska

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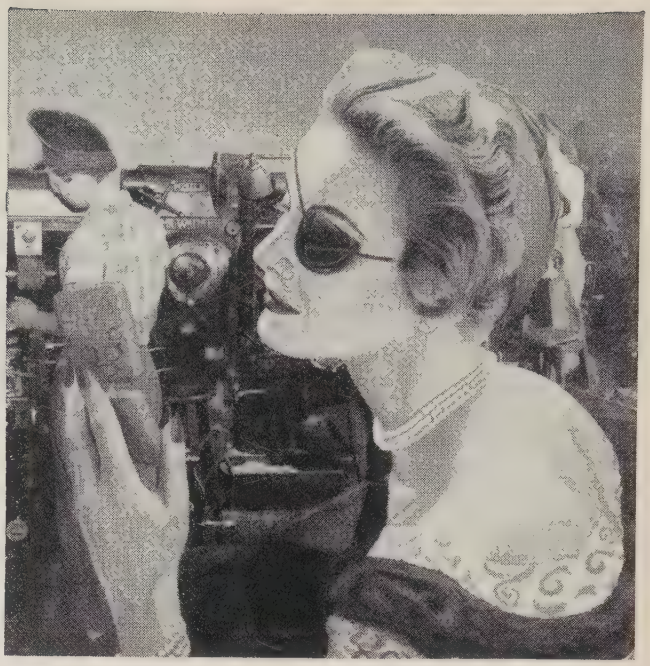
Use K-LENS-M in your eye-safety program and see the results.



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(For details, use Key # A-23 on card on page 71)

manufacturer, weigh from 15 to 40 percent less than comparable equipment of similar size and capacity.

Suitable for permanent installation or for portable use, the conveyor can be easily set-up or dismantled by one man, and greatly facilitates conveyor job spotting in plants and warehouses. Available in two capacities: 500 lb. and 900 lb. Roller sizes range from 12 inches to 20 inches. The new Magliner units can be installed as a complete system, or supplied in individual sections, with couplers to match existing systems. Portable magnesium stands in three height ranges, 17 to 72 inches above floor level, are also offered.

For details, use Key # MH-15 on Inquiry Card on page 71.

CARTON CLAMP

HIGH-STACKING of heavy loads with a carton clamp is now said to be completely safe with the double-action hydraulic Carton

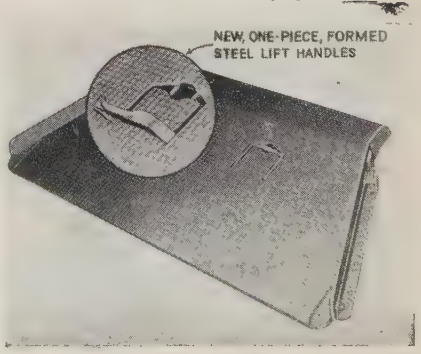
Clamp developed by Towmotor Corporation. This clamp permits faster approaches when removing heavy loads from a stack with a fork truck, because each arm is controlled by a separate hydraulic control lever. Clamp-arm pressure applied to both sides of the carton can be equalized by the driver to prevent the tipping over of high stacks of cartons. High-stacking with the clamps increases storage capacity, permits even-stacking and eliminates breakage.

For details, use Key # MH-16 on Inquiry Card on page 71.

BRIDGE RAMP WITH HANDLES

ONE-PIECE formed lift handles, a new modification on the "One Man" Bridge Ramp, has been announced by the Elizabeth Iron Works, Inc. Said to be virtually unbreakable and capable of withstanding hardest use, the steel handles accommodate the forks of any standard fork lift truck.

(Continued on next page)



When not in use, the handles drop into recesses in the ramp riding surface. In raised position, they permit the lift truck to transport the ramp to and from location. The fork lift truck operator raises and lowers the lift handles with one simple, quick motion. With a load capacity of 15,000 pounds, the "One Man" Bridge Ramp spans gaps from 5 to 58 inches. It is used between loading platform and freight car or truck.

For details, use Key # MH-17 on Inquiry Card on page 71.

LIGHT WEIGHT HAND TRUCK

A NEW MAGNESIUM hand truck has been added by Magnesium Company of America, to its line of magnesium materials handling equipment. The MAGCOA hand truck weighs 18 pounds, but its rugged capacity tops 500 pounds. It weighs one-fourth to one-third that of hand trucks made of other materials with comparable capacities. Its all-bolted construction enables

easy replacement of parts. The lightweight heavy-duty truck is ideally suited for use on beverage and other delivery trucks and for general factory, warehouse and loading dock use.

For details, use Key # MH-18 on Inquiry Card on page 71.

Investigate Accidents

(Continued from page 14)

case has been clear and proper disposition made. These investigations are frequently used by our insurance division to determine the extent of compensation which should be borne by the company.

Worth the Cost?

It is difficult to justify the cost of this type program since most of the benefits are of a rather intangible nature. This can be done only by a comparative figure of the results which are compiled from year to year. Because definite gains have been made in reducing industrial accidents and the cost of personal injury of employees to the company, we must then assume that it is worth whatever the program may cost.

From an address delivered at the 41st National Safety Congress.

Pictures by courtesy of Caterpillar Tractor Co.

...Flexible, Neoprene Coated

HOOD HEAVY-DUTY GLOVES

Model 4705

Also available as 7705, 12" gauntlet.

Hood Rubber Company makes a complete line of rubber and plastic gloves for industrial uses. Write today for our illustrated catalog featuring the Hood Glove Guide — shows you "How to choose the RIGHT glove for EACH job".

HOOD RUBBER CO., WATERTOWN, MASSACHUSETTS

A division of the B. F. Goodrich Company

(For details, use Key # A-22 on card on page 71)

Industrial Hygiene

Ventilation Conference

A THREE-DAY Industrial Ventilation Conference, sponsored jointly by the New York State Labor Department's Division of Industrial Hygiene, and Rensselaer Polytechnic Institute in Troy, New York, will be held at the Institute from January 31 to February 2, 1955.

Designed to increase knowledge of industrial exhaust systems which comply with the New York State Industrial Codes, the conference is also expected to stimulate interest in, and appreciation of the economy of, well-designed systems. The program will also include lectures by personnel from the medical and chemical units of the Department's Industrial Hygiene Division, to provide a complete picture of the industrial hygiene problem.

Main emphasis, however, will be on exhaust system design. Basic engineering lectures on the subject will be given. Classroom problems will offer the relatively inexperienced, as well as the advanced designer, increased knowledge of the science.

The Institute fee, including the Manual and the February 1, dinner, will be $25.00. For application blanks contact Professor A. A. K. Booth, Associate Chairman, Co-operative and Extension Education, Rensselaer Polytechnic Institute, Troy, New York.

A.P.H.A. Meeting

THE 82ND annual meeting of the American Public Health Association and 38 related organizations drew 3,500 public health workers to Buffalo last October. Dr. Reginald M. Atwater, executive secretary of the Association, called the meeting "one of the most significant in our history because of the emphasis on program evaluation, which means that thousands of specialists are now back on the job, in governmental and private agencies, with new perspective as to the practicalities of their day-to-day activities."

Topics of special interest were smoking and lung cancer; the combatting of infectious hepatitis and other epidemic diseases; newly discovered respiratory viruses, and developments in such health areas as air pollution, childhood accident prevention and food sanitation.

An innovation was a two-session symposium, open to all delegates, which considered from many points of view the impact of suburbanization of public health.

The president of the Association for 1954–55 is Dr. Herman E. Hilleboe, New York State commissioner of health, and the president-elect, Dr. Ira V. Hiscock, professor and head of the department of preventive medicine, Yale University. The 83rd annual meeting will be held in Kansas City, Missouri, November 14–18, 1955. The Municipal Auditorium will be headquarters.

Industrial Hygiene Courses

IN CONJUNCTION WITH its industrial hygiene program, the Institute of Industrial Medicine is offering two courses designed to deal with some of the basic problems encountered by those concerned with the control of environmental hazards. These courses were planned to be of particular interest to industrial hygienists, safety engineers, industrial physicians, insurance representatives and others in the field of occupational health and safety.

The courses are given in cooperation with the New York University College of Engineering and will be held at the Engineering School during the spring semester (February 7–May 27). Classes will meet in the evening for 15 weekly sessions. Tuition is $66.00 for each course. Application should be made through the Office of the Dean, New York University Post-Graduate Medical School, 550 First Avenue, New York 16, N. Y.

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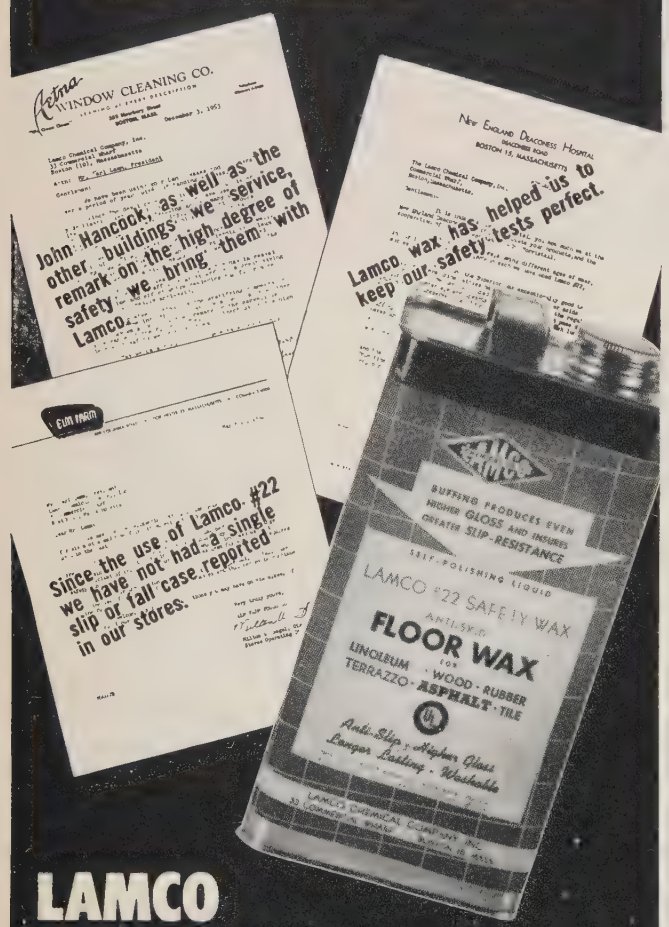
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John Hancock, as well as the other buildings we service, remark on the high degree of safety we bring them with Lamco.
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Lamco wax has helped us to keep our safety tests perfect.
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BUFFING PRODUCES EVEN HIGHER GLOSS AND INSURES GREATER SLIP-RESISTANCE
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Vacuum Cleans Everything

(from page 15)

hauster. The first hopper is the primary separator where the larger particles are separated out. The secondary separator traps the fine particles and dust.

To clean out a wind box, boiler room personnel connect the flexible hose to the nearest vacuum outlet and insert the metal nozzle into the box. The coal is picked up by the vacuum and carried back through the system where it is collected in the primary separator of about 3-ton capacity.

The recovered coal is dropped through a hatchway at the bottom of the separator into a large, wheeled lorry which takes the coal back to the furnaces' coal hopper for reuse. The fine particles and dust are reclaimed by a vacuum driven fly-ash reclaimer connected to the top of the secondary separator. The reclaimed fines are blown directly into the fire bed for their fuel value.

Vacuum's Versatility

The central vacuum system is versatile. It is also used to clean out collected fly ash from the boilers during routine maintenance shut-downs, usually once or twice a year. The vacuum system saves a considerable amount of time in this operation too. Formerly, the fly ash was removed by a team of 3 men per boiler. One man working in the boiler would shovel the ash into a bucket, the second would carry it to the boiler door, and the third man would empty the ash into a wheelbarrow for disposal.

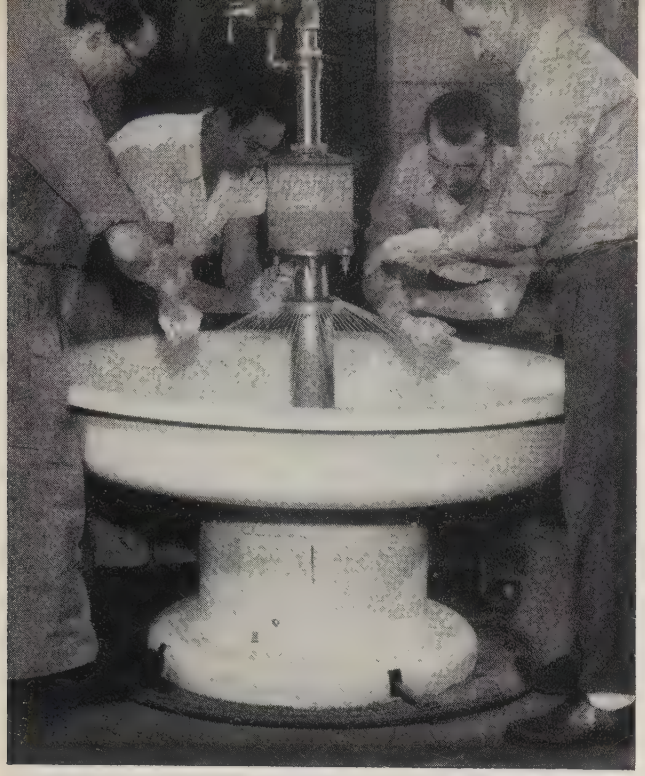
Now, one man using the vacuum-connected hose can clean out a boiler by himself. Actually, 3 or 4 men work simultaneously in individual boilers, each with a separate hose line, and remove the fly ash in less than half the time required by the old shovel-and-bucket system.

Building Maintenance

In addition to these two uses, the vacuum system is also used for routine clean-up of dirt and soot around the boiler room, on floors, walls, beams, etc., with far less dust and in considerably less time than with the old broom-and-shovel technique.

Speaking only of the time and manpower saved in performing these once grimy, but necessary, boiler room chores, Joseph K. Kroboth, chief engineer at the company, estimates that the system pays for itself fully after 2 years of operation. From the standpoint of convenience, cleanliness, and higher morale—all intangibles, but all-important to the operating efficiency of any power plant, the system continues to pay additional dividends every week.

Pictures by courtesy of Lamson-Billmyre Co.



How Clean Is Clean?

A WARTIME-INTRODUCED cleanliness program continued in peacetime has practically eliminated industrial dermatitis at the Ford Instrument Company division of the Sperry Corporation, Long Island City, New York. The incidence of industrial dermatitis is extremely low in spite of existing exposures, explains Gilbert F. Tyler, the company's safety director.

"As a result of continued emphasis on cleanliness," says Mr. Tyler, "we have reduced dermatitis to a present low of about 5 minor cases per month. In the last 18 months, only 3 of these minor cases were sufficiently serious to report under the Workmen's Compensation Law. Manifold benefits have resulted from our clean liness program. "We definitely feel it has boosted employee morale and returned to us benefits in production efficiency, less sickness, and less absenteeism. Lower insurance rates are one of the indirect benefits. Although difficult to compute, the benefits have greater value than the program costs. Due to our recent favorable experience, our dermatitis costs per worker are extremely low, a matter of only a few cents. Our average per case is 110 dollars."

Contagious Cleanliness

The safety official says it has been his personal experience that industrial dermatitis seems to occur more frequently among those who have questionable personal hygiene.

The idea of cleanliness is contagious he thinks. Those who keep themselves clean have a tendency to keep work areas clean. This contributes not only to the reduction of industrial dermatitis but can, conceivably, also reduce work accidents. The psychological results can also be extended to fire prevention.

The company's industrial cleanliness program is integrated, as far as possible, with all the various plant operations. Starting with the time a new employee is indoctrinated and receives his first talks with the medical department during pre-employment examinations, he continues to receive hygiene instruction on the foreman level while he is at his job.

"We hope by this procedure to make cleanliness an integral part of an employee's normal activity, rather than something special and set apart," Mr. Tyler remarks.

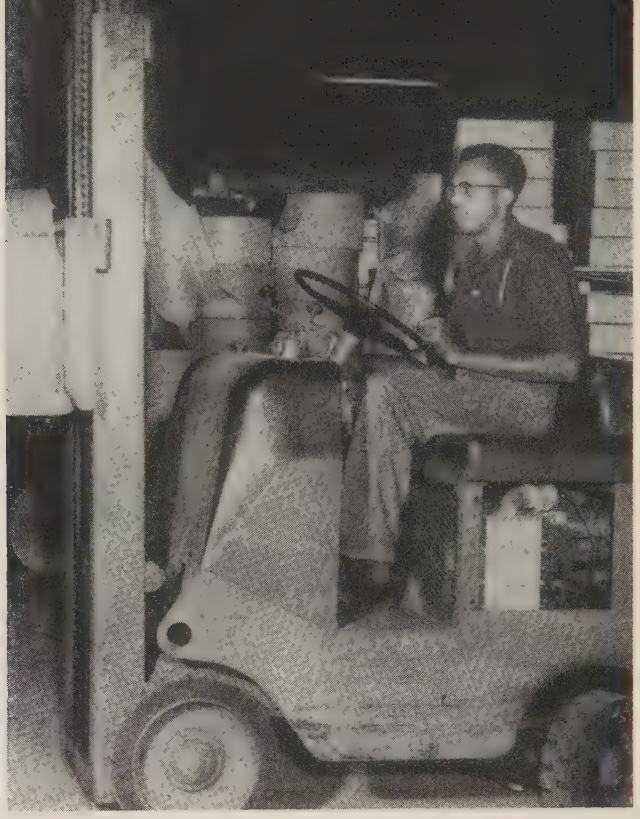
The importance of cleanliness is frequently discussed at plant meetings, implemented by the use of posters at strategic spots. One effective poster shows a worker's hands immersed in soapsuds, with the reminder: **Wash up for safety.**

Liquid and powdered soaps are used, in addition to 6 different types of protective creams. The creams are necessary because of the variety of industrial exposures. Proper washing procedures are explained orally by foremen and by occasional memoranda.

To induce cleanliness, all employees exposed to toxic materials, such as paints and solvents, and those working on coolants and cutting compounds are allowed 5-minute wash-up periods before lunch and upon leaving work. Sinks and wash fountains are added and replaced as the relocation of work areas and needs arise. Using the equation that one wash fountain equals twenty sinks, the plant has a ratio of 4 employees to a sink. Approximately 40,000 dollars is spent yearly on "building operating supplies, sanitation, and porters." Soaps, towels, and cleaning fluids account for half of this.

Paper towels are provided throughout offices and plant areas. Approximately 1,572 cases of paper towels

(Continued on page 43)



End of a headache ... CATALYST CUTS MONOXIDE

Cellulose and paper Converting Company, Philadelphia, Pa., has been able to cure a lot of headaches—literally as well as figuratively—since it equipped its gasoline-powered fork lift truck with a catalytic exhaust.

The firm which makes business machine rolls, teletype rolls, shelf paper, freezer wraps and similar products, recently leased a one-story building of 20 thousand square feet well laid out for powered fork-truck handling of large paper rolls and palletized cartons of finished products.

When it moved into this plant and modernized its materials handling operations, the company bought a lift truck with 4000-pound capacity and a 10-foot lift. Plant executives favored a gasoline-powered truck because of initial cost advantage and because it could be kept operating continuously without the need to charge batteries.

From a performance standpoint, the truck left little to be desired. However, gas fumes tended to concentrate because of insufficient ventilation, and soon there were numerous complaints about sick headaches in areas where the truck operated.

Monoxide Hangover Licked

The problem was referred to the dealer who had sold the truck to the company. The dealer recommended installation of a catalytic exhaust, manufactured by Oxy-Catalyst, Inc., to remove the carbon monoxide and other noxious gases contaminating the atmosphere.

The general manager of the company felt this would be a worthwhile investment in terms of employee safety and comfort, and authorized the dealer to equip the truck with a catalytic exhaust. Since catalytic exhausts are furnished as standard, completely assembled units for any make or size of fork lift truck, it required less than 2 hours to remove the regular truck muffler and replace it with the catalytic unit.

Results were immediately apparent. Although the truck is operated indoors continuously for 6 hours each day, there have been no perceptible effects on the workmen from the engine exhaust. Complaints of headaches have disappeared completely.

How It Works

The basic unit of the catalytic exhaust is a cartridge of spaced porcelain rods coated with a catalytic agent—catalytic alumina and platinum alloy. As the engine exhaust flows across the surface of these rods, carbon monoxide and other noxious vapors are oxidized to harmless effluents, mostly carbon dioxide and water vapor. The slight trace of contaminants remaining is far below the minimum tolerance of the U. S. Public Health Service.

The cartridge used in the catalytic exhaust is the same device which has gained national recognition in combating air pollution and recovering waste-heat energy from stack gases in industrial plants.

The same manufacturer has also developed a muffler for 4-cycle diesel engines which uses the cartridge. It

burns off the objectionable hydrocarbons and carbon monoxide in 4-cycle diesel engine exhausts and gets rid of the objectionable odors that have held back the indoor use of diesel-powered equipment.

Symptoms Disappear

When used as an exhaust gas purifier in industrial trucks, the device not only stops headaches, eye irritation, nausea, fatigue and other common symptoms of monoxide poisoning, but also prevents insidious and highly dangerous psychological symptoms. An excess of carbon monoxide has been known to seriously affect judgment and reasoning power, creating a safety hazard.

The catalytic exhaust uses two or more cartridges, depending upon the cubic-inch displacement of the engine. It can be used on any engine—mobile or stationary—which burns unleaded gasoline, and it can be easily adapted to LP Gas engines.

The units are easily installed by a mechanic or by the truck dealer. Leading truck manufacturers factory-install catalytic exhausts as optional equipment. Space requirements are the same as for the regular muffler.

Picture by courtesy of Oxy-Catalyst, Inc.

How Clean Is Clean?
(from page 41)

(25 cartons each), 45 drums (54 gallons each), and 4,500 pounds of soap are used yearly. The company has an arrangement with a local laundry for washing aprons and work clothes, with employees paying a nominal fee. An occasional "housekeeping" contest, with rules and awards, keeps employees aware of the benefits of cleanliness.

Savings Are "Appreciable"

"The cost of the total accident prevention program is debatable," Mr. Tyler notes. He maintains that safety equipment, safety glasses, safety shoes, respirators, and other items should be charged as operating expenses. Deducting these leaves only a nominal office expense and the salaries of a safety director and clerk. The safety official said it is difficult to compute the savings for plant and employee cleanliness, although it is known to be "appreciable."

In addition to the emphasis on personal cleanliness, approximately 30-odd porters and matrons keep the plant as clean as possible. The rest rooms and wash rooms are cleaned twice daily and the floors weekly.

Cafeteria facilities are provided serving 2,100 employees daily. Cleanliness is emphasized in the daily cleaning program, with particular attention to floors, counters, and tables, as well as to cooking facilities and refrigerators. Health certificates are required of cafeteria workers. The usual signs on washing requirements hang in adjoining washrooms.

Pictures by courtesy of Association of American Soap & Glycerine Producers, Inc.

The Industrial Nurse

Editor
Rosamond J. Webster
R.N., A.M., Ph.D.

Cold Cure Hunt

It has been estimated that the common cold costs industry approximately 2 billion dollars a year, from employee absenteeism. The search for a cure has been going on for some time without any measurable success. The Common Cold Foundation, a recently organized group, has announced plans to spend 500 thousand dollars over the next 5 years in an attempt to learn how to prevent or cure the common cold. Funds will be spent for research projects in several leading universities. An interesting detail is that leading industrial concerns, which are among the chief financial losers will be asked to contribute to the fund for obvious reasons.

Infection is usually by a filterable virus. The causative agent is readily transmitted from person to person; especially to those whose resistance has been lowered in some way.

Nurses are of course familiar with basic factors relating to this widespread affliction. It may be worthwhile, however, to review the basic factors which are responsible. These include (1) general debility, (2) structural abnormalities, such as hypertrophied tonsils, (3) foci of chronic infection, (4) allergic disorders of the nasopharynx, (5) vasomotor instability resulting in prolonged swelling of the nasal mucosa following exposure to cold or emotional strain, (6) injury to the mucous membranes due to inhalation of noxious fumes.

Many measures, including polybacterial vaccines, have been recommended for prophylaxis in aborting upper respiratory infections. Reports indicate that thus far none has proved to be effective. Various other remedies, including vitamin C or large doses of vitamins A and D, as well as other preparations have been tried.

The fact that the Common Cold Foundation is being organized is an indication that thus far no prophylactic for colds has been found to be effective. The search is going on in many laboratories and will continue until scientists on the staffs of commercial firms and in university laboratories come up with an adequate answer. In the meantime, industrial nurses must follow standard procedure recommended by their staff physicians in advising ailing workers.

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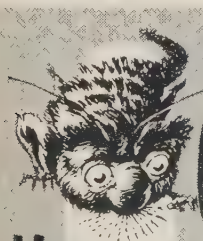

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Advising the Obese

In various technical and lay publications the subject of obesity is mentioned periodically. A midwestern psychiatrist summarizes the problem by indicating that most overweight persons are obese because of psychiatric disturbances rather than organic diseases.

If physical examination and laboratory tests are negative for an obese person who has had no previous disease, then a physiological disorder is unlikely. The chief problem in such a case is control of food intake. Age, height, body build, and lifelong eating habits must be considered in planning weight reduction. Standard height-weight tables are inadequate guides. Knowledge of why an individual may want to reduce is essential. Likewise, in an industrial setting, advice to a worker to reduce must be given on the basis of the indicated data, with a full explanation of the health and efficiency reasons for the reduction.

This quoted psychiatrist indicates that the patient may use overeating as a method for passively avoiding social responsibilities; as a symbol for a desired pregnancy; or as a method of gaining a feeling of security. Severely obese patients commonly cheat or lapse from the diet prescribed. It is a frequent experience to have such a person say "I am on a strict diet but look at me, I cannot lose any weight." Such comments and complaints cannot fool the physician or informed industrial nurse. Frequently persons using a reducing diet regain lost weight if the emotional cause of the obesity is not found.

It is also recommended that extreme caution be exercised in determining the amount of weight reduction for middle-aged persons. These individuals are frequently adjusted to a set of habit patterns. Interference with their habits may lead to severe irritability or depression. Of course, this does not necessarily apply to the hale and hearty young adult, nor even to all mature adults. Dieting can be of much help psychologically, but it must be advised and planned carefully.

Minor Disabilities

In both industrial plants and commercial offices it is the severe accident that often serves to dramatize failure to observe safety rules. Many minor ailments and disabilities do not show the same cause-effect relationship as clearly as a major accident. The numerous rashes or skin infections in industry, that affect the hands particularly, can be traced generally to certain basic products used in manufacturing. However, these ailments are also found among office workers.

In a recent study of 1200 office workers, 3 percent were found to have been affected by the substances they used in their routine tasks. Such substances included: machine (office) dyes and inks, their chemical removers, glue handled or licked, some types of paper, rubber in rubber fingers, thumbs, or elastic bands,

cardboard, paper towels, paint on pencils, carbon paper, and liquid soap.

It is readily understandable why these causes of skin rash are not readily recognized, but industrial nurses should be alerted to their presence. Most likely, in a good proportion of these minor but troublesome ailments, some susceptibility or allergic reaction will be found to be the basis of the difficulty. A properly applied patch test by the plant physician or a physician to whom the worker goes of his or her own accord, or is referred to by the medical department, will determine the substance involved. Proper precautions can then be undertaken. The incidence of such complaints is evidently not large, but a troublesome case may lead to absenteeism, some disability and even workmen's compensation costs.

Self Treatment

RECENT NEWSPAPER STORIES indicate that in the opinion of at least one competent medical observer the average medicine chest carries many hazards. The industrial nurse has an unusual opportunity to reach a large number of persons who are often inclined to make their own diagnoses of complaints by members of their families or even of themselves; to prescribe their own treatment; and then use some wholly unsuited patent medicine, of even simply aspirin. This is particularly the case during the winter season when respiratory and other ills tend to show a comparatively high incidence.

A leading medical journal presents the case histories of a group of patients with some form of skin disorder. About 70 percent had to be hospitalized because of the general effects of wrong treatment or over-treatment. Self-diagnosis and self-treatment disabled these persons. Some bought and applied at least a dozen different remedies to some skin disorder. Trivial skin rashes, irritations and other minor skin injuries were treated with antiseptics, germicides, and disinfectants without medical advice and prescriptions. The results were woeful in 7 out of 10 cases.

Turning aside from skin conditions which often baffle competent physicians as to their cause and the therapy indicated, there are many other complaints for which self-treatment is attempted. Perhaps the most prevalent one is the common cold, for which self-diagnosis is often the rule. The "just a cold" complaint may of course be the sign of pneumonia or some other serious condition. The dizzy spell is apt to be due to lack of sleep, or indigestion, or some simple cause—but it may also be significant of some serious systemic disease, as all nurses are aware. The same applies to the sufferer from a headache, the cause of which may range over a wide area. Hammering away through person-to-person talks, by lectures, and by literature may drive some at least to their own physicians or the plant medical department while treatment can still help effectively.

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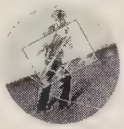

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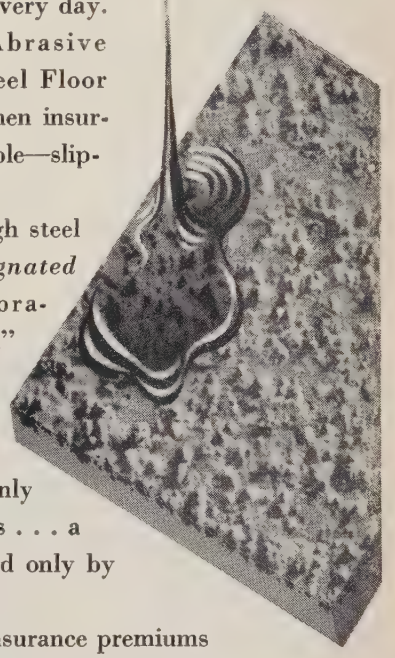

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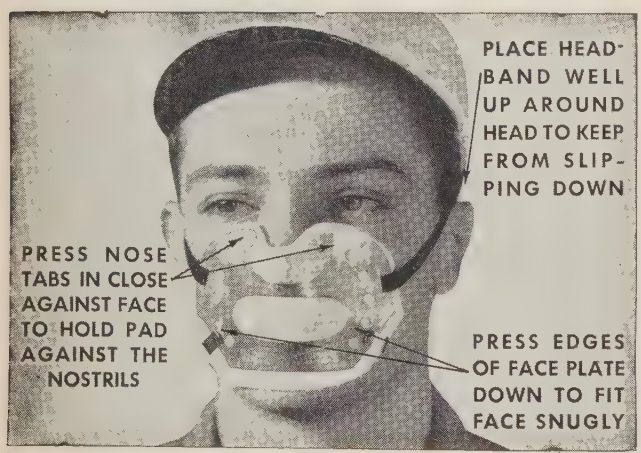
Rehabilitation

At the 39th annual convention of the International Association of Industrial Accidents Boards and Commissions, held in October 1953 (the report of which recently became available) much attention was given to the question of the rehabilitation of injured workers.

Centers specifically devoted to such purposes are being operated by insurance companies, workmen's compensation boards, universities—such as New York University and Ohio State University—and various nonprofit organizations. Of course, many hospitals, throughout the country, provide expert facilities for the diagnosis and treatment of those who require special rehabilitation services. One insurance company organized a center in 1943 because it was felt there were too many cases of injured workers who would be permanently and totally disabled unless measures were taken to restore their ability to work.

A great many workmen's compensation cases have been coming up for schedule awards before an end result has been reached. A great deal of loss of use of injured parts can be overcome and schedule awards reduced if good physical restoration techniques are applied. This summarizes in various ways specific motivation in the organization of rehabilitation facilities. If adequately organized and competently administered, there is a distinct dollar value in the services rendered with considerable opportunities for overall savings in carrying compensation risks. Added to this is another and perhaps prime consideration—the reduction in totally or severely disabled workers, possible burdens to themselves, their families, and to society as a whole. Those who come in contact with injured workers—and industrial nurses are in the forefront—need to be informed of available rehabilitation facilities, under whatever auspices. Their advice and support may at times be of supreme importance in inducing seriously injured workers to seek out competent rehabilitation facilities, to accept the program proposed, and to continue under care as long as may be deemed necessary.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Subjects of Concern

A new textbook on occupational medicine, prepared by a group of well-qualified physicians, research workers, a psychiatrist, a lawyer and an industrial nurse, is representative of the broad concept which is currently applied to this field of medicine. The growth and broad development of American industry, with the concomitant production and use of new products has at the same time, led to many new problems. However, the major emphasis must still be placed on the preventive aspects of industrial medicine.

For the purpose of indicating current thinking on the subject, let me enumerate the chapter titles of this new book. Slightly abbreviated, they are: (1) Medical history and physical examinations: (2) Medical records: (3) Preventive medicine in industry, (4) Plant surveys: (5) Protective clothing: (6) Functions of an industrial hygiene laboratory, (7) Immunizations in industry, (8) Temperature, humidity and air movement, (9) Industrial noise, (10) Fatigue, (11) Medicolegal aspects, (11) Rehabilitation of the alcoholic, (12) The occupational back, (13) Surgical considerations in industry, (14) Inplant feeding in industry (15) The nurse in industry, (16) Sanitation, water supply and pollution, (17) Washing facilities, toilet facilities, atmospheric pollution, (18) Safety, (19) Practical application of psychiatry, (20) Chemical health hazards, (21) Problems of acute poisoning.

These chapter headings may vary somewhat from other texts in this general field of medicine and industrial hygiene. Still, they are indicative of current thinking. It might serve industrial nurses well to attempt to lay out or tabulate the various functions they perform, and see how closely their own activities or partial responsibilities match the preceding chapter contents. Some may find that they are doing things not included above; that other plant personnel cover all or only some phases, and that certain areas do not fit into the scheme of organization in their own plants. The effort may pay off by highlighting some aspect which warrants further examination.

JUST FOR A MINUTE . . .

A LINEMAN replacing a hot disconnect switch, removed his rubber gloves before the job was finished. He contacted a 2400 volt switch terminal and was electrocuted instantly. In the first place he should have not been replacing a disconnect switch while it was hot; but more important, he should have kept his insulating gloves on until the job was finished.

In the investigator's book the preventive steps were listed as (a) deenergize the line by opening the disconnects; (b) don't remove rubber gloves when working around 2400 volts. He might have added: "Don't work safely half the time; you can be killed during the other half."

MINIMIZE . . .

THAT'S THE MOST we can sometimes do in safety. There are some processes that can be dangerous without the source of the danger ever being discovered. The safety man, however, can minimize the hazard of an operation without knowing the exact cause of the danger.

Take this accident for example. Two 12,000-gallon tank cars were being loaded with xylol by a rackman helper. The product was delivered to each car through a short length of 2-inch steel pipe which had an aluminum slip tube extension on the outer end. After approximately 15 minutes, one of the tank cars was full and the employee shut the valve on the loading line to that car. He then walked out on the drop platform to observe the liquid height in the other tank car. As he reached the dome and prepared to look into the car, he placed his hand on the aluminum slip tube to support himself. At that instant he heard a rumble and the explosion blew flames into his face. He jumped from drop platform but received first and second degree burns all over his body.

Although a definite source of ignition could not be determined, these steps should be taken to minimize certain hazards: 1) Initiate routine inspection of electrical ground wires at regular intervals, including a suitable record system. 2) Change from splash to submerged loading on all products having an open cup flash point of 150°F. or under. This recommendation applies only to those products loaded through open domes. 3) Install jumper wires on all slip and swing joints. 4) Install diamond plate on all swing platforms on wooden section of rack and bond to grounding system.

This applies to other operations beside the xylol loading described here. Protective equipment and safety precautions will always cut down the danger of an accident, even if they don't eliminate the source.

Learning . . . . . the hard way

1 - 2 - 3 - 4 - HIKE! . . . OOPS!

A FOOTBALL TEAM isn't the only group that can fumble when it gets its signals mixed. For instance, a roustabout gang was preparing to put antifreeze into a multicylinder gas engine. The winch line on the gang truck was used to hold the barrel of water on the tailboard of the truck. When the barrel was lowered to the ground, it turned upside down, spilling the water.

Employee attempted to free the winch line so that the gang could right the barrel. Because of a misunderstanding of signals, the winch operator took a strain on the winch line while the employee's finger was between the line and the tailboard. The line caught the employee's index finger on his left hand, severing half of the first joint. All signals should be given clearly and they should be mutually understood before any type of operation is started.

A Seal of Approval for Sanitation Products

PROPOSALS TO establish a carefully policed "seal of approval" for products used in the sanitary supply industry received support from representatives of all phases of the industry at the first annual meeting of the Industrial Housekeeping Safety Guild last November.

Those attending a symposium of manufacturers, distributors and consumers were careful to limit their support to a seal of approval which would guarantee certain minimum standards of performance in materials or equipment bearing the Guild label.

Participants in the discussion quickly vetoed suggestions that the Guild's seal of approval might specify the ingredients of tested products and their proportions.

"If you tried that you would find it next to impossible to get any honest manufacturer to give you his formulation," warned E. Willard Merritt, general sales director of the Walter G. Legge Co., New York floor polish manufacturers.

Consumer and distributor representatives both pointed out that knowing the active ingredients of a product, or the proportions of those ingredients, would mean little to them, since lack of one ingredient might be offset by the presence of another. Dan Granato, service manager for Sharp and Dohme, Philadelphia branch of Merck & Co., asserted that overall claims as to the quality of a product must still depend largely on the end use to which the product is put.

Thomas M. Shea, chief design engineer for Sharp & Dohme, brought up the point that materials and equipment account for only 15 percent of the maintenance cost of industrial plants, the rest going for labor. As a result, he said, the emphasis in buying a product must be on its ability to help do its given job faster and more effectively. The end user, Shea added, would welcome a guarantee, such as the Guild seal of approval might give, that a maintenance supply item had been tested and had given a certain minimum standard of performance.

Seymour Chase, sales manager for Federal Fibre Corp., of Long Island City, agreed that the end user is interested primarily in results. "The average buyer a salesman sees wants to know if his is a quality product, how much it costs, and whether it will do what the makers say it will do," he asserted. The Guild seal of approval, he added, should say that a product will perform in actual use as its manufacturer says it will, and that it actually contains what the manufacturer says it does. The problem of policing the quality of approved products, Chase, continued, is to see that the manufacturer maintains the quality shown in the samples he submits for testing.

Dr. Beloff, chairman of the meeting, reminded the panel participants that the Guild seal of approval would meet another important need, that of eliminating price-cutting through adulteration.

Consensus of the meeting, although no formal vote was taken, was that the Industrial Housekeeping Safety Guild should proceed with establishing a seal of approval for the sanitary supply industry.

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Money back if not entirely satisfied.

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Safety Courses

COURSES IN industrial and traffic safety will be offered in the Spring term by the Center of Safety Education, New York University. The courses are designed for safety directors, supervisors and others responsible for accident prevention. Subjects of the courses are (opening dates are indicated in parenthesis): Qualifications, Duties & Responsibilities of Safety Directors & Safety Engineers (Feb. 7); Safety Organization: Values & Limitations (Feb. 8); Management & Supervision in Accident Prevention (Feb. 7); Industrial Hygiene & Occupational Diseases (Feb. 8); Operating a Safety Program in Smaller Motor Vehicle Fleets (Feb. 9); Special Problems in Accident Prevention

(Feb. 9); Psychology of Accident Prevention (Feb. 10); Industrial Safety Technology & Instrumentation (Feb. 11).

Students may register for any of the courses during the week of January 31 to February 4 or on the first evening of each course. There is a general registration fee of $2.00, plus an individual fee of $25.00 per course.

Further information may be secured by writing to Dr. Walter A. Cutter, Center for Safety Education, New York University, Washington Square 3, N. Y.

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1953 Frequency Rates

Secretary of labor James P. Mitchell has announced that the nation's work injury frequency rate for manufacturing hit an all time low in 1953. Final figures compiled by the Department of Labor indicate that the all manufacturing rate fell from 14.3, the previous record established in 1952, to 13.4 disabling injuries per million man hours worked in 1953. Preliminary figures now available for the first half of 1954, indicate that the improvement is continuing and that a further decline will be reached when the final figures for the current year are received.

"This record," said the Secretary, "bettered our most optimistic predictions, and reflects the substantial extension of safety activities by both industry and the Department of Labor."

According to a survey made by the Department's Bureau of Labor Statistics, the downward trends in injury rates was equally pronounced among the non-manufacturing industries. The construction group, for example, reduced their injury rates for the third successive year to a post war low of 32.9. The telephone communications group established an outstanding record of only one disabling injury per million man hours worked.

The rate for wholesale and retail trade, 12.1, was down slightly from 1952, but was still above the figure of 10.9 recorded in 1949. Other industries in the transportation and utilities, service, and Government groups, showed minor decreases or little change between 1952 and 1953.

Among the individual manufacturing industries, the best showing was made by the petroleum group. The average frequency rate for this group was down 16 percent from 1952.

Although decreases predominated, there were 31 manufacturing classifications for which the 1953 injury rates were five or more percent higher than in 1952. The industries in which the most pronounced rises occurred were: vitreous enameled products, morticians goods, envelopes, electrical appliances, cold finished steel, and ordnance.

The most favorable 1953 frequency rates in manufacturing were: 1.7 for the synthetic fibers industry; 3.0 for miscellaneous communication equipment; 3.3 for synthetic rubber; 3.6 for explosives; 3.8, aircraft manufacturing; 3.9, electric lamps (bulbs); 4.1, electrical equipment for motor vehicles; 4.2, radio tubes; 4.5, rubber footwear; 4.7, ophthalmic goods; and 4.9, tires and inner tubes. In non-manufacturing the lowest rates recorded were: 1.0 for telephone communications; 1.9, insurance; 2.2, banks and other financial agencies; 3.5, retail apparel and accessories; and 4.1 for radio broadcasting.

The average time charge per disabling injury in manufacturing, including deaths and permanent impairments, was 86 days in 1953, representing only a minor change from the 1952 average of 85 days. For temporary disabilities alone the average recovery time in 1953 was 18 days. The standard injury-severity rate for all-manufacturing in 1953 was 1.2 days lost or charged for each 1,000 employee-hours worked. The highest severity rate recorded for any individual industry in 1953 was 13.2 for stevedoring.

TWO PLANTS of the Columbia-Southern Chemical Corporation have been awarded the National Safety Council's "Award of Merit" for completing more than one million man-hours without a lost-time accident.

Corpus Christi, Texas, employees chalked up 1,848,843 accident-free man-hours from Feb. 27, 1953, to April 20, 1954. The Lake Charles, Louisiana, plant worked 1,273,849 hours without a disabling injury from Feb. 26, 1953, to May 18, 1954.

R. L. Hutchison, general superintendent of Columbia-Southern, credits the safety records to "a teamwork job achieved through the enthusiastic cooperation of every worker and supervisor in the two plants."

• • •

COOK RESEARCH Laboratories, a division of Cook Electric Company, Skokie, Illinois has been awarded a Certificate of Merit for Safety Achievement in maintaining an accident frequency and severity rate better than that of industry. The award was presented by a safety service organization. The Laboratories had no lost-time accidents during the year ending June 30, 1954.

• • •

THE TOLEDO, Ohio, plant of the Du Pont Company's Fabrics and Finishes Department recently received an award of merit from the Industrial Commission of Ohio for having operated 7,415,000 man-hours over a ten-year period without lost-time injury. The Toledo safety record brings to ten the number of Du Pont Company installations that have operated for ten years or more and are continuing to do so without lost-time injury. Working on the principle that well trained people, using every available precaution, can avoid all personal injuries, the company has steadily improved its safety performance over the years.

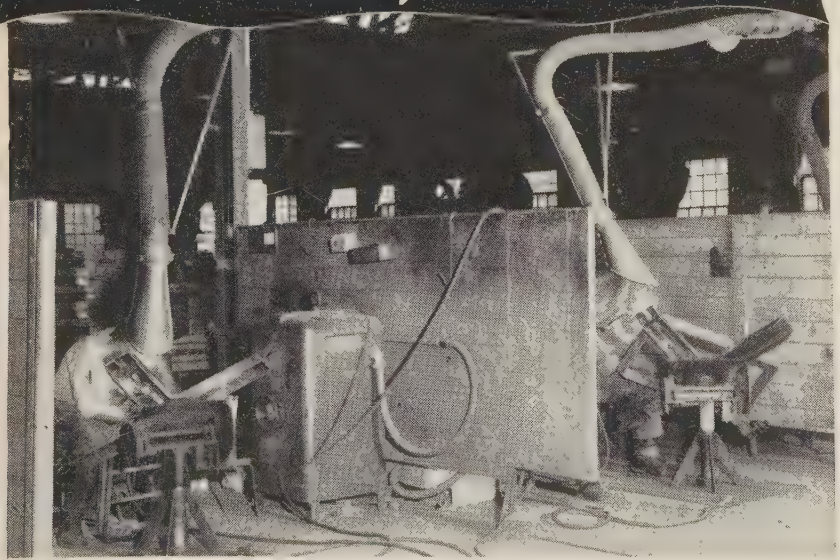
• • •

GENERAL ELECTRIC company has received a safety award from the Washington State Department of Labor and Industries, for its work done at the Hanford atomic energy plant. It was given in recognition of the all-time, company-wide record Hanford recently set by working 9,437,211 man-hours without a lost-time injury.

• • •

THE BETHLEHEM, Pa. plant of Bethlehem Steel Co. has been awarded, for the fifth consecutive year, the National Safety Council's plaque for first place in the Metals Section, Steel Mills Division Group A, 1953–1954 safety contest. The Bethlehem plant sustained only 20 disabling injuries for an accident frequency rate of 0.52 per million man-hours. The Johnstown, Sparrows Point, and Lackawanna plants of the company occupied the next three places in the contest.

RUEMELIN *Welding Fume Collectors*



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THE THOUSAND Day Safety Club for the Lime Industry—now in its 17th year—was bolstered this past fall by three new members. Having completed 1000 days or more of continuous operation without a lost time accident, three lime plants were presented Certificates of Achievement in Safety by the National Lime Association: Springfield, Mo. plant of Ash Grove Lime & Portland Cement Co.; Luckey, Ohio plant of National Gypsum Co.; and Knoxville lime plant of The Standard Lime and Stone Company.

• • •

EMPLOYEES of Lorain Works, National Tube Division, have completed more than 4,500,000 man-hours of work without a lost-time accident to establish a new safety record for this U. S. Steel Corp. plant. Approximately 11,300 employees worked a period of 76 consecutive days at a rate of about 61,000 man-hours per day without a disabling injury. The best previous mark recorded was in 1950 when 4,476,140 man-hours were worked without a lost-time accident, a period of 66 consecutive days. In announcing the record, Robert Urquhart, general superintendent, stated, "Our latest success is the direct result of the interest and cooperation that have been devoted to our safety efforts by our management group, the Joint Union-Management Safety Committee and all of our employees over a period of many years."

• • •

A UNIQUE record in construction safety was set by the John A. Volpe Construction Co. at the Limestone Air Force Base at Limestone, Maine, where the firm completed a contract for the Strategic Air Command with no lost time accidents for the entire project. During the 70-week construction of seven hangars, craftsmen in the masonry, carpentry and laboring trades worked more than 49,000 accident-free hours.

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DUPOR WATER COOLED

SMOKE MASK

A complete combination of respirator and goggles that provides lung and eye protection for painters, foundrymen, smelters, oil refiners, chemists, firemen, etc. The respirator is water-conditioned with all incoming air passing through cool, clear water. The goggles are the famous "Nod & Shake" fog-proof and gas-tight type. No finer protection, anywhere! Order sample today, $5.00 postpaid.

H. S. COVER, SOUTH BEND, IND.

"Respirators for Industry since 1894"

(For details, use Key # A-21 on card on page 71)

In recognition of outstanding safety records made during the last year, H. H. Scaff, vice president of Ebasco Services Incorporated, made the annual presentation of Plaques and Achievement Certificates to chief executives of client companies.

Texas Power & Light Company received the Ebasco Gold Plaque for achieving an Injury Index 94.75% below the National Average for the 1953–1954 award year. The Silver Plaque was awarded to the Chattanooga Gas Company for an Injury Index 89.45% below the national figure. In the Ebasco International Division the top award was presented to Compania Nacioñal de Fuerza y Luz in Costa Rica for an Injury Index 78.86% below the U. S. National Average, and the Silver Plaque to Empresa Eléctrica del Ecuador for an Injury Index 35.46% below the U. S. National Average.

ALL TYPES...ANY CLASS FIRE!

Since different fire hazards require different types of fire extinguishers, PYRENE—C-O-TWO manufactures all types . . . the finest and most complete line on the market today.

When doing business with PYRENE—C-O-TWO, you receive unbiased advice on what is best for your particular fire hazards, whether class A, B or C. Also, there is a well-rounded sales engineering organization having nation-wide representation to render top quality service wherever you're located.

Don't take unnecessary chances . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts now!

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Sales and Service in the Principal Cities of United States and Canada

COMPLETE FIRE PROTECTION

portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE • DRY CHEMCIAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

(For details, use Key # A-31 on card on page 71)

The Fire Front

October Fire Losses

ESTIMATED FIRE losses in the United States during October amounted to $57,668,000, according to the National Board of Fire Underwriters. This loss represents a decrease of 15.9 percent from losses of $68,551,000 reported for October, 1953, and a decrease of 10 percent from losses of $64,087,000 for September, 1954.

Losses for the first 10 months of 1954 now total $725,440,000, a decrease of 3.5 percent from the first 10 months of 1953, when they amounted to $751,896,000. These estimated insured losses include an allowance for uninsured and unreported losses.

Stairway Protection

AN OPEN STAIRWAY provides an ideal path for the upward travel of smoke, heated gases and flame, and is the cause of many life losses in fires.

The problem of correcting conditions in existing buildings is not easily solved according to a bulletin of the National Board of Fire Underwriters. There is first the financial angle: the cost of such work is considerable. A second feature is how these enclosures can be put in. It is seldom feasible in an existing building to totally enclose a stairway, but it may be possible to provide a partition and door at the head or foot of a stairway.

The third question is the kind of partition or separation to be used. This will depend upon the protection desired. The primary object is to stop the upward draft. This can be done with almost any kind of partition, even one made of plain glass, but if the partition is of glass or of thin wood, it will not stand up long under fire conditions and may fail before the firemen arrive and get the fire under control.

Suitable Partitions

Detailed recommendations for the enclosure of stairways and elevators in existing buildings are given in the National Building Code recommended by the National Board of Fire Underwriters.

Doors on stairway enclosures must be kept closed to make the stairway enclosure effective in stopping the upward spread of fire.

Tests have been made of several types of partitions, and an approximate rating has been given, in terms of the length of time before flame or fire will go through the partition or the time before the unexposed side gets beyond a dangerous temperature. Partition constructions which have fire resistance ratings of one to four hours are listed in the pamphlet, "Fire Resistance Ratings" and in Appendix A of the National Building Code, both published by the National Board of Fire Underwriters.

Partitions of at least 1 hour fire resistance are very desirable for enclosures to stairways or elevators. A few typical constructions are: 4 inches of brick; good quality concrete blocks; 2-inch solid gypsum blocks; 3-inch hollow gypsum blocks; 6-inch hollow clay tile, plastered; 4 inches of concrete; 2½-inch solid plaster partition with metal studs and gypsum plaster on metal lath; hollow partitions using metal studs with metal lath and ⅞-inch gypsum plaster; 2 x 4-inch wood studs using metal lath and ⅞-inch gypsum plaster (standard mix of gypsum plaster for above ratings is 1 part gypsum to 2 parts sand in scratch coat and 1 part gypsum to 3 parts sand in brown coat); 2 x 4-inch wood studs using standard perforated gypsum lath and ½-inch gypsum plaster with not over 2 parts sand to 1 part gypsum.

Fire Prevention for Plastics Industry

A COMMITTEE ON Fire Prevention has been set up by The Society of the Plastics Industry, Inc. It will develop material for a manual on fire prevention as it applies to the broad field of plastics. This new committee will work closely with the National Board of Fire Underwriters in the preparation of this manual, which will acquaint officials of municipalities and other regulatory bodies with what does and does not constitute a fire hazard in the plastics industry. This manual will also contain do's and don't's regarding "good housekeeping" in a plastic plant.

HOUSEKEEPING'S EXTRA DIVIDEND

RIGHT—Oily rags used by machine operators should be traded in each day for clean ones. Note the disposal can in tool shop is self-closing and made of metal to prevent fire in rags from spreading.

THE PICTURES on these pages tell a story of how one plant keeps itself free of fire-inviting accumulations of waste. Typical of plants where management recognizes excellent housekeeping as an important part of the production effort, the Norton Company, Worcester, Mass., makes this a continuous, tightly scheduled job. And, as shown, the company has the equipment to do it effectively.

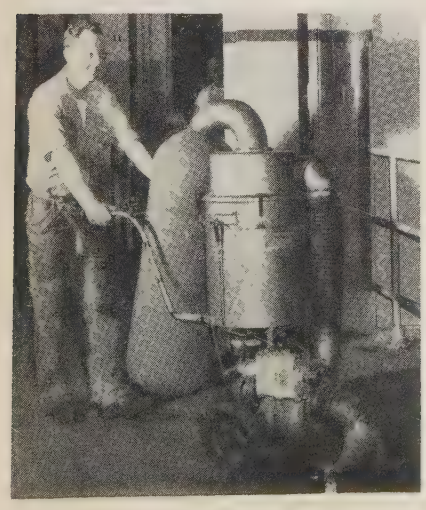
Cleanliness and orderliness are without doubt the most important single factor in keeping a plant free from ordinary fires. Fires need fuel, and a small pile of rubbish or a deposit of oil or lint can serve well as a starter. Management is automatically eliminating fire possibilities when it provides and enforces a schedule for clean-up and refuse disposal that is both frequent and thorough. Norton's management sees to it that cleaning keeps ahead of dirt-producing operations.

Orderliness is both a product of and an inducement to cleanliness. Good housekeeping practice against fire provides approved covered metal containers in which workers can deposit refuse. Cans should be scheduled to be emptied and their contents trucked away as fast as waste accumulates.

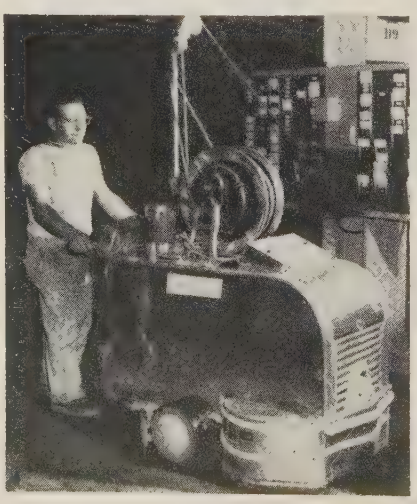
Adequate exhaust and collecting systems must be provided at processes producing combustible dusts, oil spray or heavy fumes, or spray residue.

Cleaning crews must be at hand to dispose of chips, shavings, and other

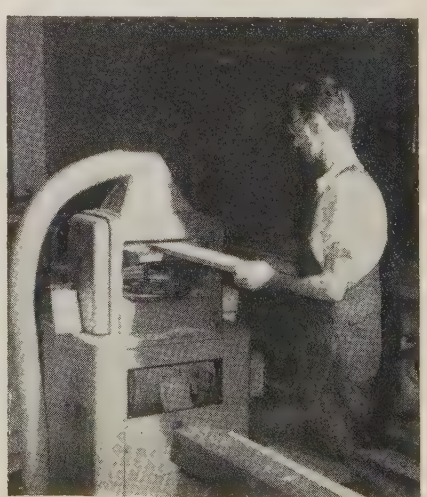
Large vacuum cleaner machine is used to sweep all plant floors free of dangerous dust.



Then electric scrubber is used to wash all floors for cleanliness and fire safety.



Here, exhaust system removes shavings from planer as they are formed for clean floor.



BELOW—top

Oily chips from machines are centrifuged for oil, then removed.

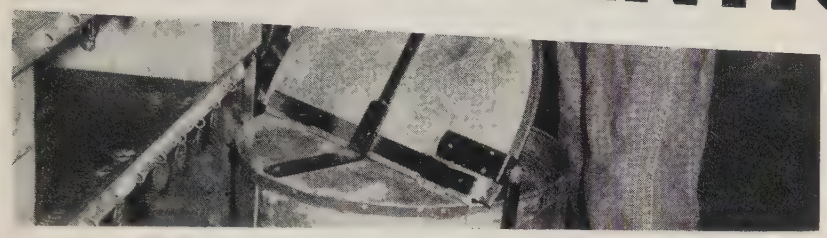
BELOW—middle

Rubbish from concrete pits is disposed of in safe dump area.

BELOW—bottom

Metal waste container is lifted from concrete pit outside plant.

FIRE PREVENTION!



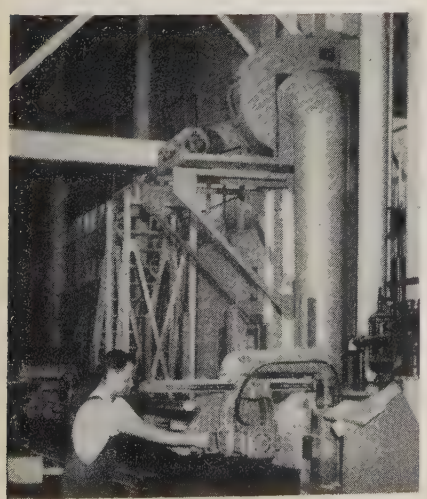
waste that can collect at machines. They should also clear out rubbish from under benches, stairways, and from elevator pits. A definite schedule for cleaning combustible deposits from beams, walls, fixtures, from under hoods and exhaust ducts is a fire protection investment.

Avoid overcrowding plant areas. Congestion not only aids the spread of fire, but hampers fire fighting. The answer is wide aisles, kept clear; well arranged equipment; and neat piling of stock and storage, keeping tops of piles at the required distance below sprinklers. Make certain that neither stock nor equipment block easy access to sprinkler valves, fire doors, or extinguishers.

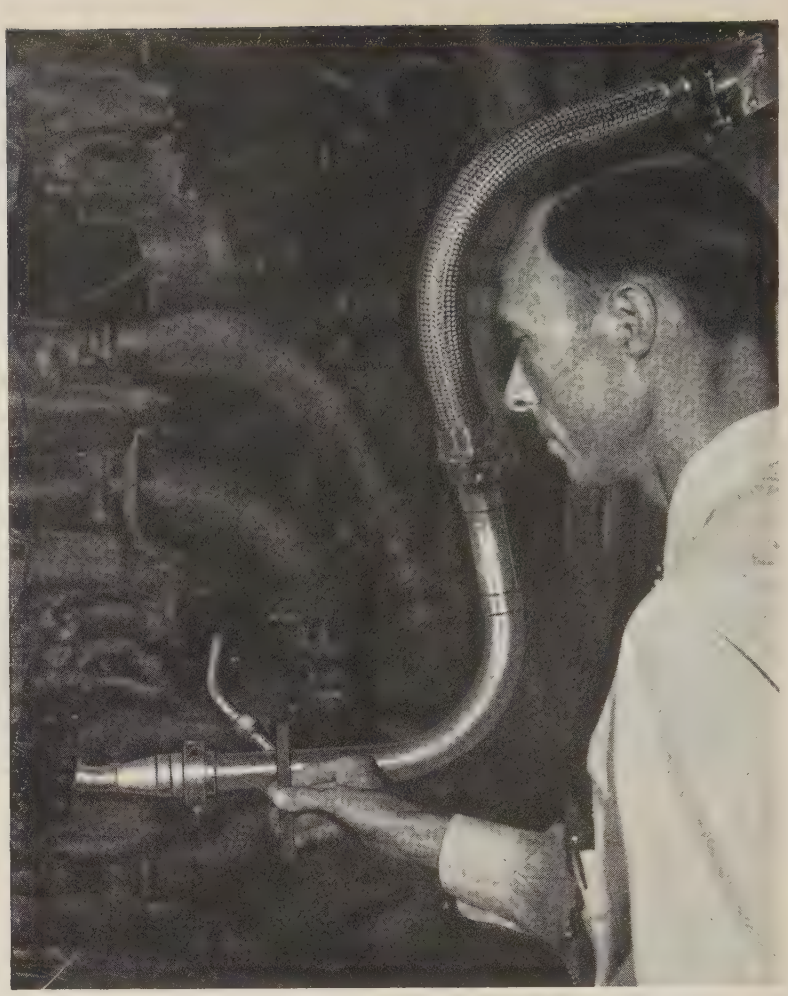
The examples shown here cover many of these safety practices. They are well worth copying or adopting—for their fire protection dividends alone—not to mention morale, accident prevention, personal hygiene, absenteeism and many other factors.

Pictures by courtesy of Factory Mutual Record.

Air-conditioner ducts draw sawdust from circular saw for safe disposal outside the plant.



Excelsior used for packing is kept in self-closing bins, with heat sensitive mechanism.



Aircraft engineer is shown checking installation of extinguisher piping on aircraft engine. Dibromodifluoromethane will flow through piping in case of fire.

TESTING A NEW EXTINGUISHANT

FLUORINATED hydrocarbon compounds, similar to those that act as cooling agents in refrigerators, freezers, and air-conditioning equipment, are said by the makers to bring new safety, easier handling, and equipment-weight savings in fire-fighting equipment for use on airplanes.

With low toxicity, negligible effect on metals, and the ability to deliver a very high volume of flame-smothering vapor at all flight temperatures, the fluorinated compounds are being made standard equipment on the new Lockheed Super Constellations and may be adopted on other commercial and military transports powered by air-cooled reciprocating engines.

Tests indicate the compounds are very effective in quelling fire involving either flammable and explosive fuels or electrical equipment.

The new fire-fighting system, first employed by Lockheed, is a high rate discharge system (HRD) developed by the Civil Aeronautics Administration technical center at Indianapolis. The standard fire-fighting agent supplied by Lockheed on all delivered planes is Du Pont "Freon-12B2" dibromodifluoromethane.

Protection Extended

One of the most significant modifications adopted in the installation is extension of fire protection to Zone 1, or the piston area, located in the forward end of the engine nacelle. Earlier extinguishing systems were designed to protect only Zones 2 and 3, but a recent civil air regulation makes Zone 1 protection mandatory. (Zone 1 includes the cylinders, while Zone 2 includes the fuel pump, starter, generator, and allied equipment. Zone 3 encompasses oil separators, plumbing, etc.)

The theory behind former protection of only Zones 2 and 3 was that fires originating in the forward areas of the engine were isolated from Zones 2 and 3, and it was believed that the high air flow in the forward part of the nacelle would automatically extinguish a piston area fire by "blowing it out."

Dibromodifluoromethane was chosen because of its ease of handling and comparatively low toxicity, the latter a negligible in-flight problem but an important consideration in ground handling.

Underwriters' Laboratories, Inc., has conducted tests on the toxicity of dibromodifluoromethane vapors. They classify this hydrocarbon as falling in Group 4 in their "Com-

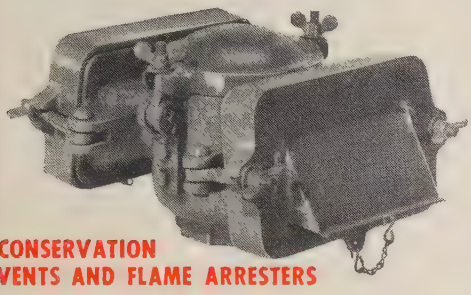
(Continued on page 59)

PROTECTOSEAL

Builds a COMPLETE LINE of SAFETY EQUIPMENT FOR THE Storage, Transfer and Use of Flammable Liquids!

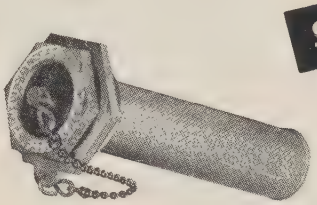
APPROVED

STORAGE



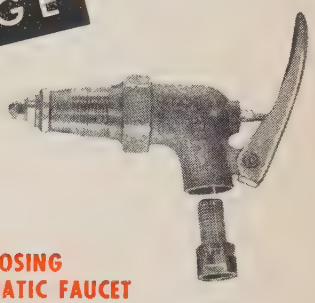
CONSERVATION VENTS AND FLAME ARRESTERS

provide pressure and vacuum relief, and breathing is retarded to reduce evaporation. Flame Arresters prevent passage of flame to interiors. All aluminum construction, or special materials on order. Approved and listed by Underwriter's Laboratories and Associated Factory Mutual Laboratories.



DRUM BUNG FITTING

a combination fill and vent which provides vacuum and automatic pressure relief, and guards against explosion under fire conditions. Double perforated metal baffle extends into drum and permits refilling without danger of interior fire.



SELF-CLOSING AUTOMATIC FAUCET

has flame arrester within the body at outlet; valve is outside body where it is not distorted by excessive pressure. Standard gaskets are Buna N, Neoprene or Thiokol; other materials upon request.

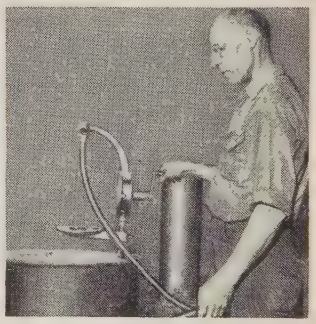
TRANSFER

SAFETY TRANSFER PUMP

Designed for complete protection against explosion and fire hazards the PROTECTOSEAL Transfer Pump has three flame arresters built into it: at the spout, above the bung adapter and at the strainer inlet within the drum. It also provides for vent and pressure relief through protected openings.

The pump is self-priming and is constructed of special aluminum alloy with a brass telescopic tube. It is quickly and easily attached to drums with bung openings as small as ¾" by hand swivel grip connectors and the telescopic tube permits pumping from either the side or end openings of 30 gallon and 55 gallon drums.

SEE OUR EXHIBIT—BOOTH 674
Plant Maintenance & Engineering Show
Jan. 24–27, 1955. Chicago Ampitheatre



PLANT USE

A—SAFETY CANS—Double concentric fire baffle inside base of spout. Spring loaded cap makes tight closure; provides pressure relief. Explosion-proof and leak-proof.

B—PLUNGER CANS—When plunger is depressed, the fluid rises into dasher to moisten swab. Excess liquid flows back into body. Dasher is a fire-protective baffle and unit is self-extinguishing.

C—WASH-DIP TANKS
Sturdy, square, electrically seam-welded design with lugs above liquid level to hold basket for draining. Top has full-length hinge and is equipped with a fusible link which drops cover automatically in case of fire.

D—OILY WASTE CAN
Tight, seam-welded body with snug fitting cover which closes automatically to smother fire. Cover opens wide with slight foot pressure on full width treadle.

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☐ Bulk and Drum Storage ☐ Transfer Pump
☐ Safety Production Cans for Plant Use

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YOU CAN'T FALL
It's a Life Saver

IT LOCKS—IT HOLDS
Prevents death and injuries from falling.

SAFETY DEVICE FOR LADDERS

Easy and inexpensive to install: Clamps to rung, peg, pole or frame. No welding or cutting.
Simple to operate: No upkeep. Requires no attention from climber. Anyone can use it.
Safety Specifications: High safety factor. Will not rust or corrode. **Write for folder.**

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SAFETY LIFELINE LOCK
FOR SCAFFOLDS
Member
National Safety Council

(Use Key # A-33 on Inquiry Card on page 71)

STOP INJURIES AND WORK INTERRUPTIONS from falling fluorescent tubes

Keep tubes in place with Den-El Fluorescent Lamp Guards, easily installed with screwdriver. Stainless steel, they spring open for relamping or cleaning, and last a lifetime.

For 40W tubes, per C, $17.00
For 100W tubes, per C, $20.50

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TESTED INDUSTRIAL SAFETY PRODUCTS

Hundreds of Safety Products. Free Catalog.
2727 W. Huntingdon St., Philadelphia 32, Pa.
(Use Key # A-34 on Inquiry Card on page 71)

inside the trade

The Goshen Manufacturing Co., Inc., has appointed new sales representatives in line with its expanded nationwide coverage on ladders. Robert M. Rink, president, has listed the following appointments: Chester P. Holt, Atlanta, covering Alabama, Florida, Georgia and eastern Tennessee; W. E. Davis, Jr., High Point, covering North and South Carolina and Virgina; Charles J. Reilly, Los Angeles, covering Arizona, California and Nevada; Howard Mfg. Co., Kent, Washington, for the Pacific Northwest; and Carlos W. Stone, Salt Lake City, for ladders in Utah, Wyoming, Montana, Idaho and western Colorado.

Boyd Blomberg has been named manager of the newly-created audiometer division of the Beltone Hearing Aid Company. He will supervise the manufacture and sales of the company's hearing test instruments.

Multi-Clean Products, Inc. of St. Paul, Minnesota has announced expansion of its manufacturing, cooling and storage facilities for floor finishes and floor cleaners. The move will increase the company's liquids production by nearly 25% in 1955, according to N. H. McRae, President. A new separate steam and hot water system will greatly aid in maintaining uniformity and quality control, so important in the manufacturing of waxes and cleaners.

Albert F. Metz, chairman of the board, and chief executive officer of The Okonite Company, manufacturers of electrical wire and cable, has been elected president of the National Electrical Manufacturers Association. Mr. Metz, former treasurer of NEMA, and a member of the NEMA Board of Governors for several years, succeeds J. H. Jewell, vice president of Westinghouse Electric Corporation, Pittsburgh, Pa.

The Donaldson Power Ventilator Company, manufacturers of powered roof and wall ventilators, has enlarged its manufacturing facilities in North Hollywood, Calif.

Announcement of the election of Raymond J. Casey as Executive Director of the National Automatic Sprinkler and Fire Control Association has been made by Arthur M. Lewis, Chairman of the Executive Committee. Casey was formerly Director of Labor Relations.

The Association also reported the election of Pickard E. Wagner as Director of Public Relations, and A. G. Woelfel as Secretary-Treasurer.

Robinson Aviation, Incorporated, vibration and shock control engineers, Teterboro, New Jersey, announces the appointment of the following new manufacturer's representatives to provide engineering service for Robinson's Airborne and Industrial Divisions: Associated Engineering Service, Inc., One Thomas Circle, N. W., Washington 5, D. C. (for Dist. of Col., Maryland, Virginia); Engineering Sales Co., 3592 Milwaukee Ave., Chicago 41, Ill. (for Iowa, Wisconsin, Indiana, No. Illinois); Engineering Sales Co., 6635 Delmar Blvd., St. Louis 5, Mo. (for Missouri, Kansas, Nebraska, So. Illinois).

Future plans of the Towmotor Company are centered around a new plant designed to streamline production facilities so as to supply the increased demand for materials handling equipment. In addition, the new plant will make space available in existing buildings for expanding research and development activities. The new Cleveland plant will add 155,000 square feet of space, and permit centralizing of departments in the main plant area.

Increasing problems caused by disposition and treatment of waste materials by industry have prompted Kaighin & Hughes, Inc., piping and mechanical contractors, to organize an Industrial Wastes Division with Edmund B. Besselievre as its manager. The new division will be equipped to provide all services, including design, engineering and contracting to solve waste materials problems.

H. A. Dietrich has been named manager of the Chicago District of Burgess-Manning Company, manufacturers of industrial noise abating equipment. Under a new national sales organization plan, announced by Ralph L. Leadbetter, President, company sales organization will consist of three primary districts, Chicago, New York and Dallas, with S. G. Paddock, manager of the Dallas Division, directing and correlating the complete sales operation.

W. A. Carroll, Jr., has been named district manager of the New York District, which includes the Eastern states and the Pittsburgh sales territory. R. T. Oliver has been assigned to New York District sales.

New Extinguishant

(from page 56

parative Life Hazard of Refrigerants." Group 4 is defined as "gases or vapors which in concentrations of the order of 2 to 2½ percent for durations of exposure of the order of 2 hr. are lethal or produce serious injury." Examples of other Group 4 refrigerants include: dichlorethylene, methyl chloride and ethyl bromide. All of these products are less toxic than chloroform or carbon tetrachloride which Underwriters classify in Group 3.

The four air-cooled reciprocating engines are protected with a total charge of 76 pounds of "Freon-12B2," stored as liquid under pressure of 600 pounds of nitrogen in four 1045-cubic inch spherical containers. Pairs of the containers are located in the left- and right-side inboard nacelle areas, with each container normally serving one engine. Each pair of bottles of the liquefied gas, however, is interconnected by valving so that either of the pair in the left nacelle, for example, can be used to combat fire in either engine on the left wing.

From the spherical storage tanks, one and three-quarter inch steel tubing carries the fire extinguishing compound to each nacelle, where it is proportioned properly by the discharge nozzles in Zones 1, 2, and 3, and in the engine induction system. A conventional nozzle and spraybar are used to distribute the fluorinated hydrocarbon in case of a combustion heater fire.

One of the most important advantages of the HRD fire extinguishing system rests in the fact that it extends protection to the Zone 1 area with no significant weight increase in equipment such as piping and discharge nozzles.

Gages for checking pressure of the extinguishing agent are located on each of the four spherical tanks, and special thermal relief valves on each container provide an extra safety margin. Indicators visible from outside the plane make it easy to determine whether the containers have been thermally relieved.

Picture by courtesy of Lockheed Aircraft Co.

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(For details, use Key # A-35 on card on page 71)

Noise levels are no obstacle to this safety signal! Nail mills, boiler factories, shuttle rooms no longer present a signalling problem.

Forget NOISE!

27S BEACON RAY

The warning beam of light from this Beacon Ray will penetrate through any noise levels! Rotating through 360° this concentrated beam will reflect off any bright surface to warn the unwary even though they may be facing the other way.

With or without audible signals in service a Beacon Ray with its greater intensity and range will pin-point the location of danger. An audible signal will fail to do this. Write for full details on the new low-cost Federal 27S Beacon Ray warning light.

FEDERAL SIGN and SIGNAL Corporation

Formerly: Federal Enterprises, Inc.

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(For details, use Key # A-36 on card on page 71)

Packaging & Materials Handling Show

With the opening sessions for the Short Course in Packaging and Materials Handling, co-sponsored by the University of Illinois, the Society of Industrial Packaging and Materials Handling Engineers formally launched its 9th annual National Meeting.

Divided into two sections—one on Fundamentals of Packaging; the other on the Fundamentals of Materials Handling—unnecessary waste in time, labor and breakage control were emphasized as important considerations for sound business operation. In discussing "Cutting Costs in the Shipping Room," Elaine R. Pitts, Packaging Engineer, Sperry and Hutchinson Company, Chicago, said, "It's always possible to pack to prevent damage—the trick is to prevent damage and control expense without costly *over*-packing." Miss Pitts pointed out that the principal areas of savings are in time and materials. Irvin L. Reis, Lecturer in Industrial Engineering, University of Illinois, said, "Materials handling activities often account for up to 35 to 40 per cent of all production costs, and some instances show where that figure has been as high as 62 per cent."

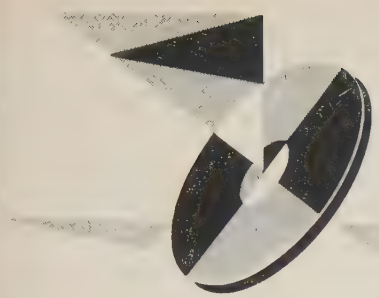
In discussing price to the retail customer, Joseph A. Burnham, Manager, Warehouse Services, at Marshall Field and Company, Chicago, is of the conviction that when increased cost of a product adds nothing to its value, management owes it to its customers to maintain an operation that will keep pricing common with most businesses and in line with quality of merchandise. Burnham said that his company "in nearly all retailers, has been experiencing a profit squeeze. We have been wrestling with this cost-of-handling problem. We've done a good bit of rearrangement of stocks to facilitate access, and to make the relative placement of goods more rational. We've done an extensive housecleaning job to weed out dead stock. We've cleaned up our warehouse to reduce soilage. We've reduced congestion in stock areas. We've built some shortcuts into our system for handling merchandise ordered for a particular customer." Among other things, it was pointed out that acceptable prepacking proved a real saving as well as a customer service, since merchandise stays cleaner and chances for damage are reduced.

In discussing "Modern Handling Methods from Old Plant Layouts," L. A. Seversen, Manager Warehousing Division, Central Scientific Company, said: "The age-old, ever changing, never ending problem of old plants and modern handling seems to be one of the great challenges of the day. Recently constructed, modern-type of building plants appear to have no serious problems, and the general trend of thinking by management leads one to believe that new buildings are the answer to all problems. I, for one, do not agree completely. It is true that handling is greatly facilitated by one-story, specifically designed buildings, and that old, multi-story buildings cannot, in most cases, compare percentage-wise in the efficiency of modern handling. I do feel, however, that with all of the new building equipment presently available that many industries can economically operate efficiently in their present facilities."

Exposition

The 9th National Industrial Packaging and Materials Handling Exposition was held in conjunction with the SIPMHE meeting. Approximately 100 exhibits featured a complete range of shipping containers; manual and power-operated industrial trucks and materials handling equipment; container closing, sealing and marking equipment, devices and supplies; conveyors; interior packaging and cushioning materials; corrosion, rust preventive and inhibiting materials, equipment and methods; packaging and wrapping materials and equipment; systems, equipment and supplies of direct interest to packaging and materials handling engineers.

(For details, use Key # A-37 on card on page 71)

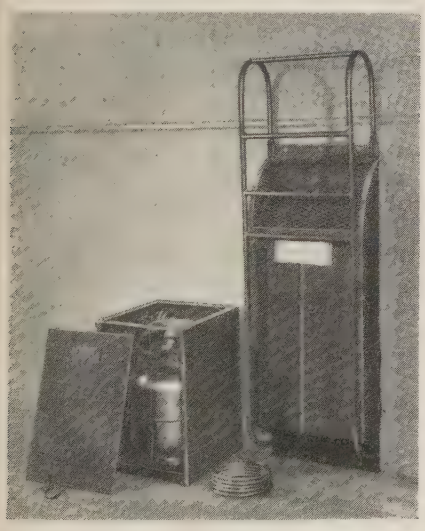


transportation safety

CARGO SPACE HEATER

PRODUCTION OF A LOW COST, permanently-mounted cargo space heater for full time cargo protection in truck and semi-trailer vans is announced by the Rue R. Elston Co., Inc., manufacturers of commercial motor freight heating equipment.

Termed the "Elston X-1000 Series," the L.P. gas-fired heater has a 16,000 BTU capacity and can be controlled either manually or thermostatically (optional). A 20 pound propane bottle will last 31 hours at continual operation—with thermostatic controls, the unit will burn up to 58 hours on a single tank.



The heater consists of two basic units—heater assembly and bottle carrier—and, according to the manufacturer, the cargo heater can be permanently mounted in a truck or trailer van with very little effort.

Dimensions of the heater are: height, 59 inches; width, 16 inches; depth, 8 inches, including heater guard. The unit weighs 85 pounds. All models comply with I.C.C. flue-vented cargo space heating rules.

For full details, use Key number TS-10 on inquiry card on page 71.

Better Headlights . . . Safer Driving!

A NEW TYPE OF sealed beam headlamp, designed to make night driving easier and safer, has been unveiled by the Automobile Manufacturers Association.

The improved design is the product of a 4-year cooperative engineering effort by American motor vehicle and headlamp manufacturers, working closely with public officials in the states and provinces of Canada. A similar program produced the present sealed beam design introduced in 1939.

Development and testing work has been completed and the new lamp now is ready for production. It is completely interchangeable with sealed beam lamps presently in use, and will be adopted as standard equipment by all motor vehicle manufacturers in the United States and Canada during the 1955 model year.

Three major improvements are incorporated in the new design:

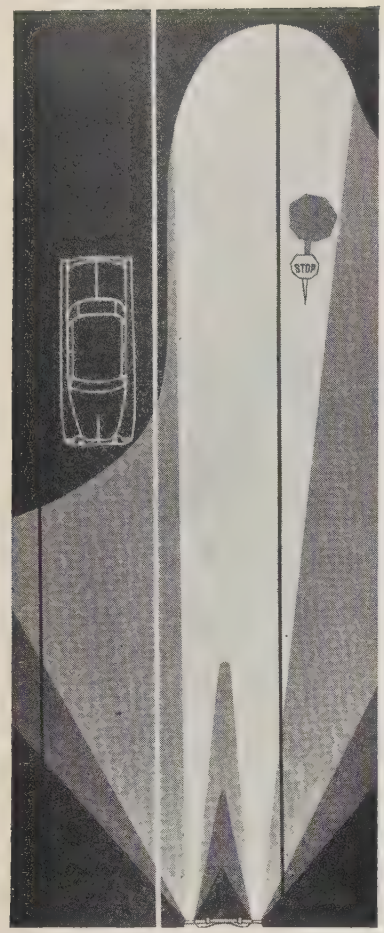
1. Better distribution of light on the roadway. The lower beam is most noticeably improved, giving as much as 80 feet more seeing distance along the right side and shoulder of the road.

2. A sharp reduction in stray light radiating upward from the lower beam filament. This change greatly improves night seeing ability in fog, rain, or other adverse weather conditions, and lessens the possibility of glare.

3. More light throughout both beam patterns.

Stray Light Controlled

The stray upward light from the lower beam has been controlled by the use of an opaque cap or shield accurately positioned over the lower beam filament, and by changes in lens design. The filament cap blocks undesirable rays of light coming di-



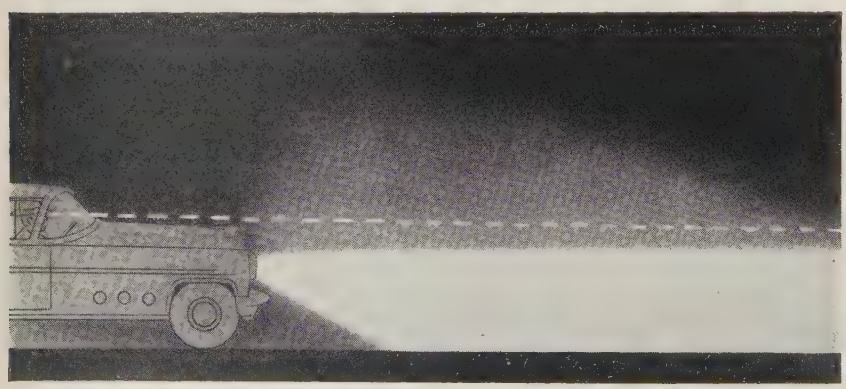
New sealed-beam headlights concentrate light on right side of road, further ahead, and control glare areas, marked in gray.

rectly from the filament, but does not interfere with the main beam formed by the reflector.

To get improved light distribution, increased seeing distance, and more light, the lamp designers made other modifications in the lens and added 5 watts of electrical power to each beam. The present 35-watt lower beam has been stepped up to 40 watts and the upper beam wattage has been raised from 45 to 50. This provides additional light ahead of the vehicle, but stays within the existing statutory limitations on beam candlepower.

Lighting engineers demonstrating the new design stress the importance of headlamp aiming. For the motorist to enjoy the maximum advantages of lamp design, whether it be the old or new sealed beam type, he must make sure the aim is right and that lenses are clean. Headlamp aim, say engineers, should be checked periodically as a part of regular vehicle maintenance.

A basic precept in the original sealed beam program was to make aiming easy and accurate. The new lamps are aimed by the same simple procedure. Also, like the present sealed beam unit, the new type is constructed as a single unit, hermetically sealed against dirt and moisture to assure long and efficient life.



Upward "Spill" light through which driver cannot see well is reduced by lower beam lamps. Note dotted line of driver's vision.

History of the Program

Development of the improved lamp grew from the fact that night driving conditions have changed significantly during the past 15 years, the Association reports. The number of motor vehicles in the United States has doubled since World War II. As a result, the average driver at night must keep his headlights depressed for oncoming vehicles much more of the time than was the case when the present type of sealed beam lamp was introduced. The primary objective of the cooperative industry headlamp improvement program, therefore, has been to increase the seeing distances provided by the lower beam.

The program was initiated by the Engineering Advisory Committee of the Association in September of 1950, at the request of the Engineering Committee of the American Association of Motor Vehicle Administrators, which is composed of officials responsible for the administration of motor vehicle regulations in all of the states and territories of the United States and the provinces of Canada.

Responsibility for the program then was assigned to the AMA's Vehicle Lighting Committee, composed of engineering representatives from the various vehicle manufacturers. Actual engineering development work was delegated to a special subcommittee of engineers from 5 producers of motor vehicle headlamps. The new design worked out by the two committees received the unanimous approval of the administrators at their annual meeting in October of 1953.

Revised wording of the headlamp provisions of the Uniform Vehicle Code, permitting use of the new headlamps, was approved by the National Committee on Traffic Laws and Ordinances, June 28, 1954.

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(For details, use Key # A-38 on card on page 71)

However, before the new lamps may be installed on new motor vehicles as original equipment, restrictive statutes in some states must be changed. These statutes, which govern the type of lighting equipment that may be installed on motor vehicles, apply to specifications for the sealed beam lamps now used. The new lamps, therefore, would be in technical violation of some of these statutes. To legalize use of the new lamps, 22 jurisdictions must pass corrective legislation in 1955. Vehicle manufacturers, the Association reports, are hoping to be able to start factory installation of the lamps by mid-year.

Picture and charts by courtesy of the General Electric Co.

Snow Melting Systems

FLICK A switch and watch ice and snow melt away from driveways, roads or sidewalks! With a system of pipe embedded in the pavement, the ice and snow melt away when a heated fluid is circulated through the pipe coils.

Instead of getting out snow shovels, plows, tire chains, ashes, chemicals, sand, sweepers or other equipment, the owners of snow melting systems merely throw the switch that starts the heating and circulating equipment. Even that is unnecessary in some installations where the starting is done automatically by photo-electric cell controls or other devices.

The fluids are light oils or permanent antifreeze solutions. They vanquish the ice and snow as it falls, by conduction. In addition to averting the labor of snow removal, the systems help reduce maintenance costs due to slush and water being carried into buildings. Accident hazards are reduced and good will created.

At industrial plants, slowdowns from traffic tieups are reduced. The systems are also used in the sidewalks for stores, hotels, banks and other structures. They may be used at filling stations and airports. At the exits and entrances on high speed highways, the systems have great value for reducing hazards and keeping traffic moving. Many of these transportation links are on grades and become impassable unless kept clear.

The Highway Toll

THE NATION'S organized safety educational and enforcement pressures are at last beginning to make a dent in the annual highway death toll, according to Arthur S. Johnson, Director of the Institute For Safer Living. He said that more than 1,400 persons are now alive who would not have been if the fatality figures of 1953 had been repeated in 1954. Although the number of motor vehicle miles traveled this past year has climbed three percent, motor vehicle deaths have declined about six percent.

Dent Pitifully Small

However, Mr. Johnson grimly emphasized that the dent remains pitifully small. He predicted a minimum of 36,000 traffic deaths in 1955, or an equivalent of six fatalities per 100 million vehicle miles driven.

He pointed out that if the present highway death rate is permitted to continue during the next 20 years, 800,000 persons, equal to one tenth of the population of New York City will be killed, and the number of disabled and injured will equal the total population of all New England, New York and New Jersey.

He stated that many individuals and agencies in the safety field are now working hard to establish new concepts of engineering, enforcement and driver education that will be geared to meet the mushrooming growth in driver population and vehicle miles traveled. Until these improved methods are found and put into effect, Mr. Johnson warned that there can be no great hope of rolling back the flood tide of life and property destruction on the highways.

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(Use Key # A-39 on Inquiry Card on page 71)

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(Use Key # A-40 on Inquiry Card on page 71)

Supervision of Youth

ALTHOUGH MUCH has been written about good supervision of workers generally, very little of such information has been specifically directed to the supervision and safety of young workers. Yet, each year a million and a half young people under 20 take their first jobs.

As a guide to on-the-job supervisors of young workers, the Bureau of Labor Standards of the U. S. Department of Labor has recently published a 16-page pamphlet, "The Youth You Supervise." The first part takes a fresh look at what youth are like and what makes them that way. The second part contains some reminders of what this means to those who supervise them at work. Included is material on the relation between safety and supervision.

A limited number of copies are available free from the Bureau of Labor Standards. Quantities can be obtained from the Superintendent of Documents, Washington 25, D. C., for 10¢ a copy or $7.50 a hundred.

Act Your Age!

A NEW HIGHWAY safety booklet which depicts drivers who act like children at the wheel of a car as a major cause of automobile accidents has been released. The new booklet paraphrases the story of an award-winning movie, also entitled "Look Who's Driving," which has twice won national recognition as the top traffic safety film of 1954 and was selected for showing abroad at the Venice and Edinburgh film festivals. "Look Who's Driving" is the story of Charlie Younghead, an average American motorist who wonders why so many of his fellow drivers act like kids when driving. Once, though, Charlie loses control of himself and he, too, becomes a child at the wheel, resulting in a crash that nearly costs him his life.

In a psychological approach to highway safety, "Look Who's Driving" pictures improper attitudes that result in bad driving practices as the childlike behavior of motorists who don't act their age behind the wheel. Illustrations in the booklet are exact reproductions of scenes from the movie.

Oil Inspector's Manual

THE 28TH EDITION of the Fisher/Tag Manual for Inspectors of Petroleum is now off the press. The 220-page manual now gives all the essential details for 35 of the most widely used tests for the basic physical and chemical properties of petroleum and its products, such as gravity, color, viscosity, distillation range, vapor pressure, gum content, sulfur, carbon residue, flash point, water and sediment, melting point, cloud and pour points, consistency.

The most useful of the conversion tables adopted internationally in 1953 are reprinted in full in the manual; others are abridged. A variety of other tables have been added so that the inspector has everything he needs in one handy volume. There's a complete cross-index and a separate numerical index to the official ASTM methods used in the book.

The book is available for $1.75 from Fisher Scientific Co., 717 Forbes St., Pittsburgh 19, Pa.

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

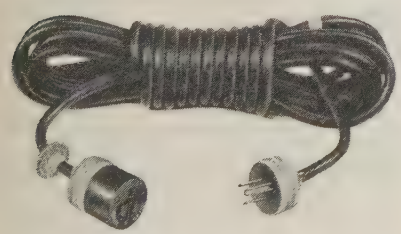
Service Dept.,
SAFETY MAINTENANCE & PRODUCTION

SHORT-TYPE SILENCER

(Use Key # 764 on Inquiry Card on page 71)

A NEW TYPE of silencer, designed for use on the intake and discharge of centrifugal blowers where length is a limiting factor, has been announced by Burgess-Manning Company. It may be used also to silence high frequency noise.

Known as the ACA Series, this snubber is an absorption type silencer. Air flow is channeled through an annular passage which is lined with acoustically transparent tubes, backed up with deep layers of highly efficient sound absorbing material. The silencer is specifically designed for places where diameter is not a problem but length must be kept to a minimum. This series is designed to handle relatively moisture free air up to 200°F., but can be used for considerably higher temperatures, with use of special sound absorbing materials.

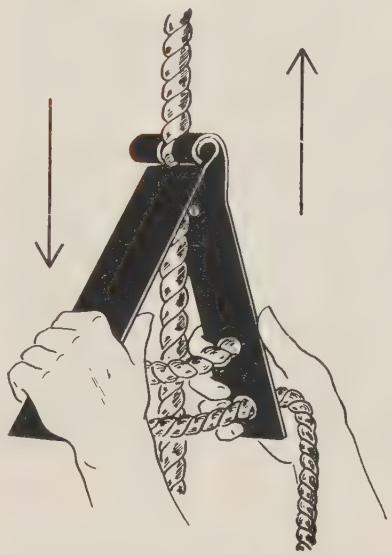


GROUNDED EXTENSION CORD

(Use Key # 765 on Inquiry Card on page 71)

A COMPLETELY shockproof, grounded 3-wire U-blade extension cord set is being made by the Rodale Mfg. Co., Inc.

This Grounded Extension Cord Set has been especially designed to meet the new grounding requirements which go into effect on January 1, 1955, and will accommodate the new 3-wire caps which will be components of many portable tools and appliances. Features of the new cord include an armored cap and connector with metal cord clamps, and #16-3 Type S.J. Heavy Duty Wire. Available in lengths of 10, 25, 50, and 100 feet, the rating for the cord is 15 Amperes, 125 Volts. It is Underwriters' Listed.



LIFELINE SHOCK ABSORBER

(Use Key # 766 on Inquiry Card on page 71)

A REVOLUTIONARY new safety device for men who work in high places has been developed by the Rose Manufacturing Co. The product, the Safe-Hi Rope Grab, can be used anywhere that a vertical rope can be hung through the working area. It is a convenient metal gripping device which attaches instantly around any ¾" manila rope. When attached to a safety belt by means of a safety line, its special design acts to absorb the shock of a fall, yet in no way will it weaken itself or the life line on which it is attached.

The grip is secured by detaching the two metal strips from each other at the top curved joints, allowing the rope to be slipped between the strips into the rope hole provided, and reattaching the strips at the joints. The rope grab can also be moved up or down by this easy method. The safety line from a safety belt is laced through the two sets of holes in each arm. The Rope Grab cannot be knocked off accidentally. Its lightweight features make it easy to use, and its extremely high safety factor will greatly reduce injury or death for men who work on scaffolding, swinging stages, structural steel, bridge building and in every other type of work where men are exposed to the hazards of falls.

VERSATILE VACUUM CLEANER

(Use Key # 767 on Inquiry Card on page 71)

A NEW Series 80 heavy duty industrial and commercial type vacuum cleaner is announced by The Breuer Electric Mfg. Co. The machine features a motor or power unit that can be removed from the top of the tank cover. This motor unit can then be converted into a portable electric blower, a pack carried vacuum cleaner, a powerful insecticide sprayer, or an air sweeper for removal of paper and debris. Also a large size tank cover plate is available to fit a 55-gallon drum, therefore converting the capacity of the cleaner to 55 gallons with the addition of a large size filter bag.

Features of the new machine include a new type motor that cannot overheat or burn out when operated under maximum-load, constant-duty conditions. A new type air impeller gives air speeds for cleaning and blowing up to 325 m.p.h. Tanks are 15 gallon capacity for wet or dry pickup, and made of stainless steel. New dust filter bags are designed to remove all seams from the direct air stream and provide maximum filter efficiency with greater filter life. The Series 80 is equipped with four large ball bearing caster wheels and 20 feet of heavy duty, gray, non-marking neoprene covered cable. Three models are available in ¾, 1 and 1½ H.P. sizes.

ODOR & FUME CONTROL

(Use Key # 768 on Inquiry Card on page 71)

DEVELOPMENT OF an efficient, low-cost process for removing industrial odors and fumes and recovering valuable vapors from plant exhausts is announced by Chemurgic Process Corp. The process, called Siftaire, makes use of activated carbon. It is now available commercially to the following industries for recovery operations or in odor or fume prevention: antibiotics, chemicals, cork, edible oils, fish, fertilizer, insulation, sewage, meat packing, pharmaceuticals, rendering plants, paints and varnish, pulp and paper, plastics, rubber, petroleum, glue, soap and detergents, etc.

Activated carbon is spongelike, containing tiny cavities and capillaries, and is therefore able to attract and hold, or "absorb," vapors. A one-inch cube of carbon may have a surface area of five acres and is therefore an excellent agent for vapor adsorption. Since carbon will not adsorb at high temperatures, cooler air is mixed with the hot exhaust before it reaches the filtering carbon. The Siftaire process also provides a practical method of cleaning or "regenerating" the "filled" carbon. Basically, the cleaning is done by raising the temperature so that the adsorbed vapor is driven off the surface of the carbon. If recovery of the vapor is desired, it can be condensed or collected by other means for re-use. If the vapor is to be destroyed, it is piped to a furnace where complete combustion converts the odorous substance into odorless and colorless carbon dioxide and water.

INSULATED SAFETY SHOE

(Use Key # 769 on Inquiry Card on page 71)

HERE IS A new type of safety shoe the "Thermaliner," developed expressly for hot-mills, refrigeration departments, ice plants, miners, yard gangs, field crews or wherever feet are exposed to extremes of heat or cold. The entire upper is padded with a thin layer of foamed vinyl that contains millions of tiny "sealed-air" bubbles . . . the same principle used to insulate the home against winter cold and summer heat. The manufacturer, Lehigh Safety Shoe Co., finds the vinyl padding superior to other insulating materials because it does not absorb moisture, perspiration, oil or odors.

Also available in an 8-inch height field boot and a 12-inch rubber winter-pac. All styles include regular steel toe protection.

PLASTIC FINISH CHASES "SLIPPERY FLOOR GHOST"

(Use Key # 770 on Inquiry Card on page 71)

A NEW 100 percent plastic floor finish, reported to be slip-proof, has just been announced by Colonial Refining & Chemical Company. Called "Super Glazoleum," this new floor finish promises to open an entire new concept of floor maintenance with a definite end to the vexing problem of how to keep floors shiny bright and safe at the same time. The new non-slip product is a plastic resin emulsion which produces an amazingly high lustre—yet slick as it looks, it is anti-slip, according to the makers. This safety factor, it is said, is superior to many other old style floor finishes.

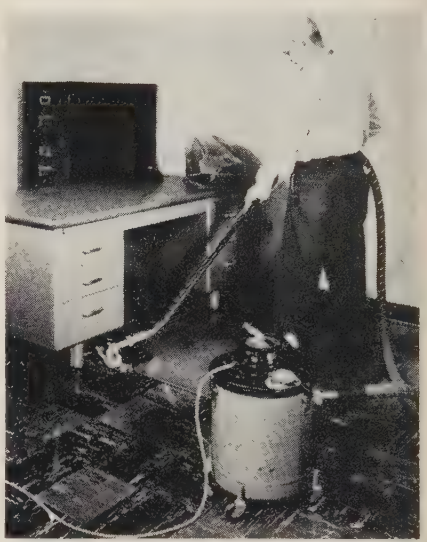
It is recommended for tile, linoleum, cork, terrazzo, magnesite, and cement floors. It resists scuffing, and offers no maintenance problem—damp mopping removes surface dirt and keeps it shiny new. After months of use, if the user wants to clean his floors down to the base, he finds Super Glazoleum is easy to remove. This new slip-proof plastic is applied with an applicator furnished by the manufacturer. It is available only through factory distributors who make complete inspections of the floors to be treated.

NEW SPECTACLE GOGGLES

(Use Key # 771 on Inquiry Card on page 71)

A NEW LINE of Spectacle-Type Goggles has recently been introduced by Fendall Company. The new goggles closely resemble modern personal glasses, but are of exceptionally rugged construction to withstand severe abuse. The manufacturer emphasizes the new comfort-fit design for greater worker acceptance. New L-1 shaped lenses are also featured in the spectacles. This new shape provides increased safety by closer conformance to the eye area of the face. Its widest point fits well into the nasal area, and its shape follows closely along the side of the nose to prevent entrance of foreign particles.

Produced in a complete range of lens and bridge sizes, the new spectacles are available in metal or non-flammable acetate frames. Metal frames are of non-corrosive nickel silver with full-floating rocking nose pads. Other features are said to include new temple joint construction; new skull temples and new perspiration-proof temple insulation.



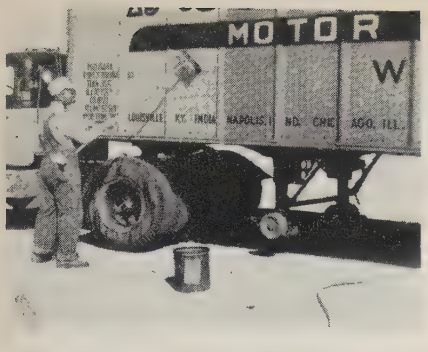
NON-FLOOD VACUUM CLEANER

(Use Key # 772 on Inquiry Card on page 71)

A STURDY, light weight wet-dry vacuum cleaner, the new Multi-Clean D-100 is particularly suitable for cleaning smaller offices, showrooms, stores, motels, etc. Owners of smaller buildings and large building managers who have never considered it economical to own a large capacity wet-dry vacuum cleaner will also find the D-100 ideally suited to their needs, according to the manufacturer, Multi-Clean Products, Inc.

Weighing only 29 pounds, this small industrial vacuum cleaner will also have special appeal in situations where it will be operated by women. Capacity of the all-steel welded tank is 3¾ gallons of liquid or nearly ½ bushel of dry material. The motor is said to develop a 71-inch water lift. Ball bearings are permanently sealed in lubricant and no further lubrication is necessary.

An important safety feature is an automatic device that protects the motor against damage from accidental flooding during wet pickup. Before the tank can be filled to the danger point, the safety fuse stops all further pickup until the tank is emptied and the fuse replaced. Attachments include an intake adapter, a standard 8 foot 1½ inch hose, a wand, both floor and hand tools. A wet pickup is available at slight additional cost.

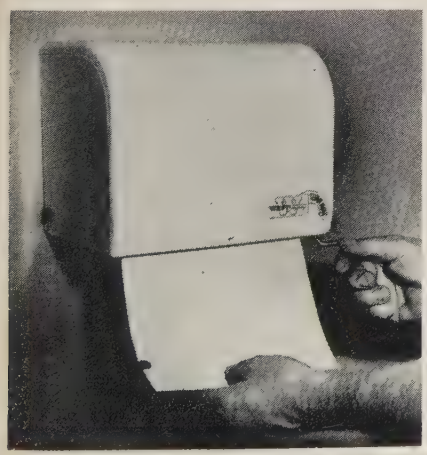


RUST & SCALE SOLVENT

(Use Key # 773 on Inquiry Card on page 71)

A NEW TYPE solvent for rust, scale, lime and corrosion removes these deposits from metal and other surfaces and at the same time strips light oil, grease and dirt films. Made by Brulin & Co., Inc., the Rust & Scale Solvent has innumerable applications, such as the cleaning of metal before painting; cleaning of hot water handling units including heat exchangers, valves, pipes and condensers; cleaning of automotive blocks by submersion to remove grease and rust, but not hard carbon deposits. In the food industry, the solvent will give good results in cleaning stainless steel equipment. It may be applied either with swab, spray method, or by circulating dip tank.

The solvent will etch and neutralize alkali of fresh concrete and thereby give good adhesion for the concrete paint. It is safe to handle, does not give off dangerous fumes and also cleans the surface. Its basic application, however, is in the cleaning of rust and scale from metals, particularly aluminum. The product will not attack gaskets or rubber.



NEW TOWEL DISPENSER

(Use Key # 774 on Inquiry Card on page 71)

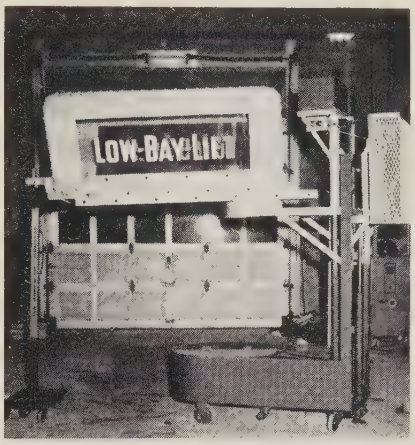
THE NEW Westroll paper-towel dispenser mechanism utilizes a simple crank-feed principle to discourage "raids" on paper-towel supply. Each roll of the continuous paper-toweling is economically metered-out, and savings in servicing and re-filling time are claimed for this newly improved towel dispensing cabinet. West Disinfecting Company's engineers have used nylon worm-gearing in this crank-operated mechanism for smooth, dependable operation. This eliminates the need for lock-feed timing devices more commonly used. No adjustments of the feed-cycle are necessary, and waste is effectively reduced.

Spaced notches along the left edge of the towel, grow closer together as the towel supply is used—providing simple indication and adequate warning that the roll is due for replacement. Each roll of Westroll towels furnishes approximately 660 absorbent sheets—the equivalent of more than four 150-towel packs, of the standard interfolded type.

LOW BAY LIGHTING MAINTENANCE LIFT

(Use Key # 775 on Inquiry Card on page 71)

AN ADDITION to the Barrett line, the Low Bay Lifter, has been developed to handle lighting maintenance at lower



heights. It is designed for industrial plants or offices where the lighting is set low, and also where floor-load rating would not permit the use of a heavy power-driven maintenance unit.

The operation is to maneuver the unit into position; lift to the proper height for the maintenance man to reach the lighting fixture; and then extend the horizontal platform out to the length desired, either with the stiff supporting leg attached to the end of the platform, or with the supporting leg temporarily removed for easier maneuvering.

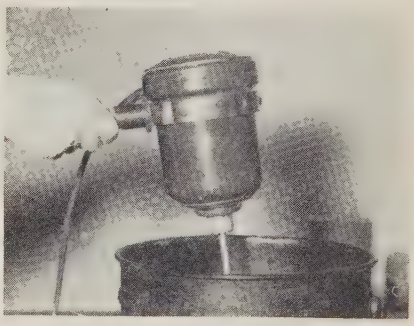
To lift, there is a push button control that can be operated either from the floor or from the platform. When in position for service, there is also a push button to pump water from the base rubber bulb tank into the service washing tanks mounted on the platform. There are also drains to remove the soiled water from the tanks above, draining back into the base tanks outside of the rubber bulb. It is not necessary to dispose of any water during a day's operation. Canvases mounted on the sides of the platform, act as guard rails for the maintenance man and also as protection against spillage on machines and operators below. A swivel base allows rotation of the main assembly on a 280° arc. Between this rotating motion and the lift available, an operator can reach any light within 20 feet extended position from 8 to 13 feet off the floor. The low-bay lifter is made by Barrett-Cravens Co.

PIPE INSULATION PROTECTOR

(Use Key # 776 on Inquiry Card on page 71)

A PREFABRICATED, specially compounded poly-vinyl chloride acetate pipe covering finish, designed to protect insulation against weather, abrasion, chemicals, mildew, etc., has been announced by Miracle Adhesives Corporation. Named Protektinsul, this covering, furnished to exact size, simply zips on and locks in place with its patented integral all poly-vinyl closure that insures a watertight and airtight longitudinal joint, and provides the ultimate in ease of application. It requires no cutting, fitting, or sewing in the field.

As a cover over the insulation, Protektinsul provides all of the requirements of an excellent exterior finish, indoors, outdoors, and underground, and is available in colors. No painting, refinishing, or further maintenance is required to remove stains which normally develop in service. Oil, rust or dirt can be removed with a damp cloth.

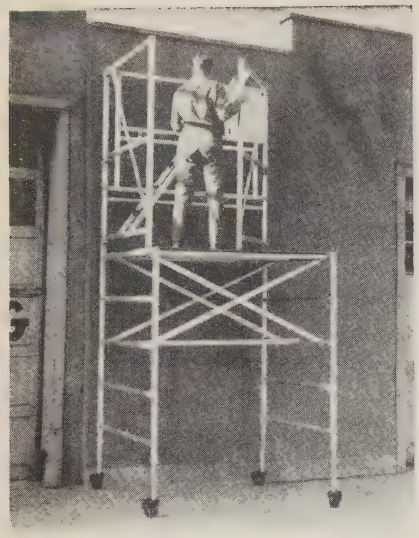


ULTRASONIC INSPECTION & CLEANING

(Use Key # 777 on Inquiry Card on page 71)

THE APPLICATION of ultrasonic vibration to their visible penetrant inspection method with startling improvement in speed and effectiveness, has been announced by The Met-L-Chek Co. The ultrasonic equipment is compact, moderate in price, and simple in operation. It can also be used for general surface cleaning when the ultimate in soil removal is desired for plating, painting and other processing.

High speed vibration greatly accelerates penetration, water washing to remove excess penetrant dye, and development of flaw indications in the inspection of metal, ceramic, glass, and plastic surfaces.



EXTRA-WIDE SCAFFOLD

(Use Key # 778 on Inquiry Card on page 71)

AN EXTRA-WIDE Aluminum Ladder Scaffold will highlight the Patent Scaffolding Company's display of all types of scaffolding and ladders for plant and refinery maintenance and repairs at Booth 640 at the Plant Maintenance Show. This 4'6"-wide scaffold provides users with added stability and extra working room for painting, relamping, cleaning and general maintenance work. Lightweight aluminum components are easy to handle and erect. Base sections are 6' high and other heights are achieved by adding other units of 4' and 5'4". A built-in 24" leg adjustment permits added height adjustment without lifting scaffold. Rubber-tired casters permit scaffold to be moved from job to job.

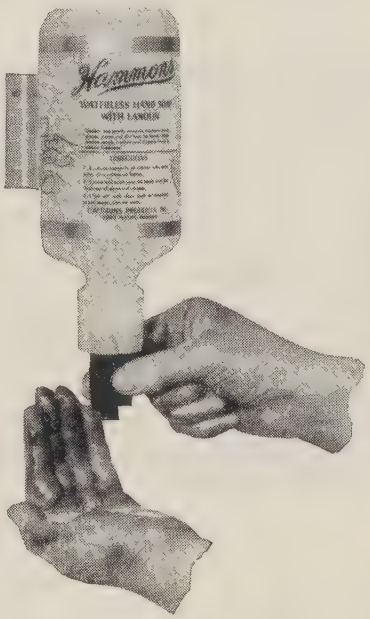
HEAT RESISTANT PLASTIC

(Use Key # 779 on Inquiry Card on page 71)

OF INTEREST to industry in general, and particularly to the chemical processing, food processing and electrical industries, is a new material known as "Agilene-HT," which consists of ordinary Polyethylene whose molecular structure and such properties as its heat resistance and tensile strength have been altered by subjecting it to a bombardment of sub-atomic particles of high energy. The American Agile Corp. states that the new plastic will withstand temperatures as high as 350° F. and therefore can be used for evaporators and other vessels used for boiling solutions. Also, food, pharmaceutical, and biological equipment, constructed of this new material can be easily and frequently sterilized for cleanliness and sanitation. The excellent dielectric properties of Polyethylene can now be utilized at considerably higher temperatures.

The mechanical properties of the irradiated plastic material, such as tensile strength and elongation are considerably improved. A marked increase in solvent resistance is encountered, and "Agilene-HT" retains all of the traditionally desirable properties of ordinary Polyethylene such as toughness, flexibility, impact resistance, and complete inertness in most chemical environments.

The picture shows (left to right): a conventional Polyethylene beaker at room temperature; conventional beaker after three minutes at 300° F; after six minutes at this same temperature; after eight minutes; after 10 minutes. At extreme right, irradiated Polyethylene beaker after one hour at 300° F.



HAND CLEANER DISPENSER

(Use Key # 780 on Inquiry Card on page 71)

DESIGNED TO make cleaning facilities more readily available in industrial plants or for outdoor workers, an improved dispenser made of unbreakable, corrosion-proof polyethylene with synthetic rubber nozzle delivers metered amounts of waterless skin cleaner. The predetermined amount of cleanser is calculated to clean most soiled hands thoroughly. Withdrawal of the measured quantity is accomplished by simply squeezing the pliable nozzle between two fingers. A swivel mounting mechanism is provided for up-ending the container when refilling. Installed in production areas, the dispenser is said to provide 60-second hand cleaning near machines or work. Its use helps solve the need for additional clean-up stations in the current trend toward horizontal rather than vertical expansion of production areas.

The new dispensers, made by Hammons Products, Inc., are used with a waterless liquid cream containing lanolin and similar emollients and hexachlorophene to guard against dermatitis, drying and chapping. The waterless-type skin cleaner removes all common materials, except lacquers, without the use of water.

PLASTIC GUARD MATERIAL

(Use Key # 781 on Inquiry Card on page 71)

A TRANSPARENT, scratch and abrasion resistant glazing material, suitable for a broad range of safety applications, was recently announced by the Homalite Corp. The new material, Homalite CR-39, is made of thermosetting resins and should be of special interest to safety engineers and equipment designers using or specifying protective glazing. It should also interest architects concerned with buildings where explosion hazards might exist.

Company spokesmen say that the new product is immune to chemical action. Since it is also virtually unaffected by welding splatter, it should find wide application in metal-working. It is easily machined and has "light-piping" and "edge-lighting" qualities, recommending its use in instrument panels and faces. It is light weight and highly resistant to shatter, abrasion and scratches.

Homalite CR-39 is envisioned for use in such applications as safety goggles, and shields, instrument faces, grinding wheel guards, windows for viewing dangerous processes, cab glazing on power shovels and cranes, and numerous similar uses. A free sample is available.

EMERGENCY LOCK RELEASE

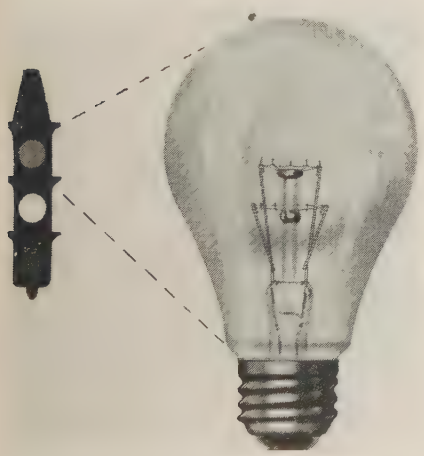
(Use Key # 782 on Inquiry Card on page 71)

A RADICALLY new emergency lock release has just been placed on the market by the Greenline Metals Products Inc. through the national distributorship of American Allsafe Co., Inc. Over the hasp and padlock is a special metal case with glass door. In an emergency, a tap on the glass breaks it and a spring immediately

forces open the hasp below. No key is necessary, although for ordinary use, usual keys may be used. To discourage unauthorized entry, provision is made for the emergency lock to be connected to an alarm bell, annunciator, siren, light or the plant alarm system—any one of which operates when the glass is broken by the attached hammer.

Its uses are manifold. Plant, store or home doors may be equipped with this easy-access emergency lock. It can be used for volunteer fire departments, boiler rooms, to protect any type of switch or emergency equipment. By placing fire extinguishers, first aid kits, or water pails in a closet or box equipped with the Greenline emergency lock release, they are always easily available for inspection or test, yet locked away from prying fingers. In an emergency, no key is needed.

Police and armed force or civil defense officials can protect everything from arms and ammunition to first aid supplies. Hospitals can keep drugs or oxygen tanks securely locked, yet instantly available for emergency use. Used on entrance doors, the locks permit emergency access by police or firemen. Tear gas, carbon dioxide fire extinguishing valves or other mechanical or electrical machinery may be geared to this same emergency lock. A similar lock device can be placed on windows or at other locations which should be locked under normal conditions, yet easily opened for emergencies.



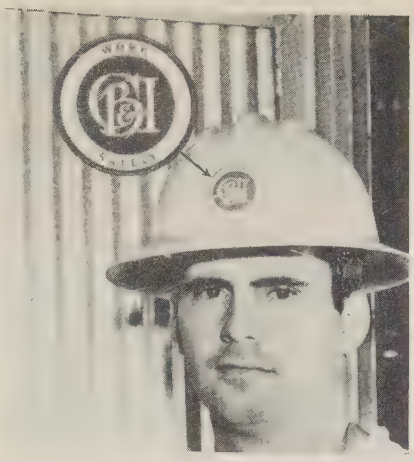
LIGHT BULB SAVES LIVES

(Use Key # 783 on Inquiry Card on page 71)

AN ELECTRIC light bulb with a built in safety device designed to prevent accidents around dangerous machinery or processes, at road intersections, railroad crossings, bridges, airports, etc., is announced by Solar Electric Corp.

The lamp, called the Dual Traffic Signal, contains two filaments: a 50-watt filament designed for 5000 hours life and a 25-watt filament for 8000 hours. When the 50-watt filament burns out, the 25-watt filament continues to burn with a lower light. This light is sufficient to give a warning to the public, but dim enough to warn a police patrol or maintenance department that the lamp needs replacing.

The new 75-watt lamp has a medium base, is enclosed in an A-21 bulb, and may be used in any position.



SAFETY SLOGANS FOR HATS

(Use Key # 784 on Inquiry Card on page 71)

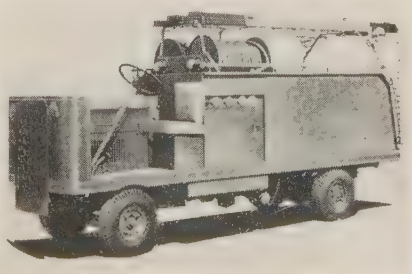
A SELF-STICKING accident prevention sign for use on safety helmets is the newest addition to the W. H. Brady Company's line of safety products. Safety engineers use these handy, low cost signs to put a safety message on every Safety Helmet. They make every workman a walking safety advertisement, because the safety message is at the eye level of every other worker.

Safety Helmet Signs are made with any design or wording, trademark, company name, message, etc., in any size or shape. They can be furnished in any color for ready identification of various classifications of workmen. They come mounted on handy Blue Streak Dispenser Cards and are applied without moistening in a few seconds to any type hard hat—aluminum, plastic, fiberglas, etc. Readers requesting further information will receive a free sample of the self-sticking signs.

INDUSTRIAL FIRE TRUCK

(Use Key # 785 on Inquiry Card on page 71)

THE HIGH-PRESSURE fog method of fighting fires, developed by John Bean Division, Food Machinery and Chemical Corporation, has now been incorporated in a new and radically different industrial fire truck. Designed into the new unit is all the fire fighting punch of a full-size municipal type fire truck—with size and maneuverability engineered for negotiating factory aisles with ease. Using only one-tenth the volume of water discharged under ordinary pressures, the high pressure fog apparatus cools, smothers and isolates flames and is effective against fires in oil, gasoline, lacquers, solvents and all other flammable liquids and materials except magnesium.



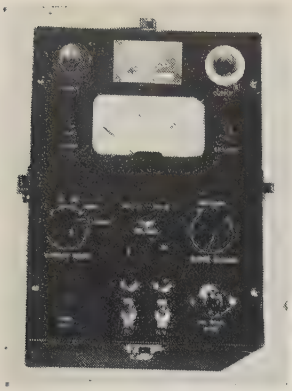
Two fog lines, operating from spring loaded reels, are equipped with trigger controlled fog guns. Each gun is easily handled by one man and is quickly adjusted from distance stream to close-up fog. The truck's 300-gallon tank holds enough water for a 20 minutes of normal fire fighting and the truck also is equipped to pump water from plant water lines or from a straight draft source such as a pond or a cistern. Only 4 feet wide, 140 inches long and 79 inches high, the new truck has a wheelbase of only 76 inches and a turning radius of less than 15 feet. Powered by a 98-hp industrial engine, it can go 25 mph, has four forward speeds and reverse and can climb a 16 percent grade fully loaded. The front end has a heavy duty "bucking head" for pushing through aisles blocked with trays, pallets or other obstacles.

AUTOMATIC EXTINGUISHER

(Use Key # 786 on Inquiry Card on page 71)

COMPACT, self-contained and providing fully automatic fire protection, Firetox units may be installed quickly and easily. The unit is hung from the ceiling on a bracket (furnished) and requires no other parts. No additional piping or intricate alarm systems are needed. The extinguisher goes into action automatically when temperature rises to 165°F. Its solder fuse melts releasing the extinguishing agent (carbon tetrachloride) as a vapor that settles over the fire like a blanket. There is no water or chemical damage and the unit carries the U. L. label.

Firetox offers fire protection for industry, hotels, and institutions, garages, homes, commercial vehicles and powerboats. It is particularly suitable for closed area "danger spots" such as storage rooms, motor rooms, closets, work shops and rooms housing electrical equipment. According to the national distributors, Standard Safety Products Co., a carefully planned installation of several units may be used for the protection of open areas as well.



INSULATION TESTER

(Use Key # 787 on Inquiry Card on page 71)

THE DEVELOPMENT of a new TAKK 5000 Volt D.C. Insulation Test Set is announced by The Hewson Co., Inc. This instrument is used as a preventive maintenance tool on all types of low-voltage electrical and electronic apparatus, including motors, wiring, transformers, switchgear, telephone equipment, circuit breakers and similar equipment. The Model 53–5 KV Test Set combines in one small instrument (weight only 15 lbs.) a 5000 volt D.C. power supply and an ultra sensitive current meter, each of which can be used independently. It provides a voltage range from 0 to 5000 volts (continuous, variable) and 5 current ranges: 0–0.1 microampere; 0–1; 0–10; 0–100 and 0–1000 microamperes. The microammeter is extremely sensitive and accurate. Current readings as low as 0.002 microamperes and resistance readings up to 5 million megohms may be taken.

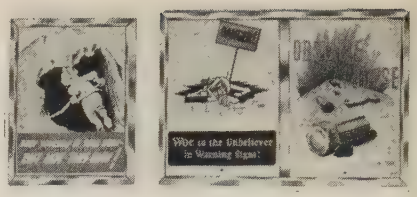
The unit performs over-voltage tests, resistance tests, breakdown tests and dielectric absorption tests. It utilizes proven test procedures already widely used in the higher voltage field. This tester gives warning of weaknesses or defects in insulation so that maintenance procedures can be carried out before there is a costly breakdown.

GERMICIDAL PADS

(Use Key # 788 on Inquiry Card on page 71)

A SIMPLE wiping with a new disposable cloth wafer, impregnated with an active germicide that is harmless to human beings, sanitizes and deodorizes telephone mouthpieces in a few seconds. The cloth pads, named tel-O-cide and packed in jars of one hundred, are recommended for regular telephone hygiene in offices, factories, or institutions.

General Scientific Equipment Co., distributor of the pads, emphasizes that moisture from the pad dries almost instantly on the mouthpiece and receiver, requiring no additional wiping to return the instrument to service after disinfecting.



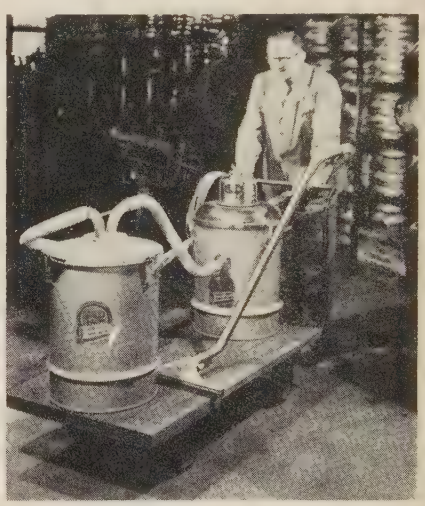
FRAMES FOR POSTER DISPLAY AND STORAGE

(Use Key # 789 on Inquiry Card on page 71)

AN ATTRACTIVE, chrome plated, glass front frame, designed specifically for displaying standard 8½ x 11 posters, has been developed by A. C. Davenport and Son, Inc., manufacturers of safety, directory and cork bulletin boards.

The new frame is designed so that it can be "magazine loaded." As many as six posters can be stored in the back of the frame. In this way, when a change in posters is desired, it is necessary only to remove the poster on display. The next poster will immediately be in place.

Ruggedly chrome plated, the Dav-Son Safety Poster Frame is available in either single or double frame sizes. Sturdy construction, with mitered corners and reinforced backing, assure years of service.



EXTRA TANK FOR VACUUM

(Use Key # 790 on Inquiry Card on page 71)

OWNERS OF WET vacuum machines can increase the recovered liquid capacity of the equipment by 15 gallons, through the use of a Hild Add-A-Tank, made by the Hild Floor Machine Co. The units can also be used as a water-separator with built-in vacuum systems.

The Add-A-Tank was designed originally to increase to 25 gallons the capacity of the Hild Model 115 "Fool-Proof" Vacuum. With the intake hose connected to the extra tank, vacuum suction first fills the extra tank to its full 15-gallon capacity. Water then flows over into the 10-gallon vacuum tank through a connecting hose.

The extra tank may be obtained with a wheel carriage, making it fully portable. It is also available without wheels for placement on a hand truck along with a de-wheeled vacuum tank. The Add-A-Tank is easily emptied by bailing out a few pailfuls and dumping the rest.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the opposite page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti Fogging Equipment
104	Sweatbands
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
111	Safety Toe Shoes
112	Safety Boots
113	Wooden Sole Shoes
114	Anti-Slip Soles
115	Oil-Proof Soles
116	Welding Helmets
117	Welding Curtains
118	Protective Skin Creams
119	Skin Cleansers & Soaps
120	Hand Drying Equipment
121	Sanitary Drinking Cups
122	Athlete's Foot Control
123	Salt Tablets
124	Noise Control
125	Antiseptic Medication
126	Burn Medication
127	First Aid Kits & Supplies
128	Stretchers & Litters
129	Resuscitators
130	Portable Ventilators
131	Dust & Fume Collectors
132	Carbon Monoxide Control
133	Fire Extinguishers
134	Safety Cans
134A	Extinguishing Ash Trays
135	Fire Pump Equipment
136	Alarms & Warning Lights
137	Safer Solvents
138	Flammable Liquid Pumps
139	Explosion-Proof Lights
140	Safety Gasoline Tanks
141	Anti-Slip Flooring
142	Anti-Slip Waxes & Finishes
143	Floor Cleaning Products
144	Floor Machine Equipment
145	Oil & Grease Absorbents
146	Paints
147	Ladders & Safety Devices
148	Scaffolds
149	Work Platforms
150	Fluorescent Lamp Guards
151	Machine Guards
152	Power Press Feeders
153	Safety Signs
154	Aisle Marking Equipment
155	Safety Awards & Emblems
156	Employee Safety Guide
157	Hand Tools

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

PERSONAL PROTECTION

Disaster Equipment 559
Mine Safety Appliances Co. An unusually instructive booklet, designed to assist industrial plants in choosing safety and rescue equipment for use in emergencies, such as fires, explosions, tornadoes, etc. Divided into 5 sections, the booklet shows the needs of a rescue team, engineering team, and medical team, and contains an equipment check chart and a catalog of individual items.

Visored Goggles 560
Jones & Co. Illustrated folder shows several models of light-weight one-piece plastic lens goggles (clear or green) that have an opaque shield across the top to prevent glare from overhead lighting.

Aluminized Asbestos Clothing 561
Industrial Safety Specialties Co. Swatches of aluminized asbestos are included in this illustrated folder describing heat and fire resistant garments for industrial workers, firemen, rescue teams. Included is a rescue kit for truckers, police cars and ambulances.

BUILDING MAINTENANCE

Waxless Floor Finish 562
Brulin & Co., Inc. A waxless, non-plastic emulsion floor finish that is listed by U.L. as an anti-slip material is described in this bulletin, which emphasizes that no buffing is required. Suitable for all types of floors.

Maintenance of Cement & Terrazzo Floors 563
Hillyard Chemical Co. A file folder offers treating specifications for cement and terrazzo floors, including tips on laying the floors, sealing them, proper cleaning methods and daily maintenance. Various steps in use of maintenance products well illustrated.

Steel Tile Floors 564
Flash-Stone Co. Illustrated 4-page folder shows use of metal floor plates, embedded in concrete for factory areas subject to extreme wear and abuse. Non-slip features and safe anchoring of plates are outlined.

Preserving Concrete Floors 565
Stonhard Co. A pocket-size folder explains how the use of a special concrete seal prevents "dusting" and protects the surface against damage by food acids, grease, oil and abrasive wear.

Tubular Steel Scaffolding 566
Beaver Art Metal Corp. A 16-page general catalog and parts list for tubular steel scaffolding and materials hoisting towers for construction and maintenance. Fully illustrated, the catalog also features safety rules for erecting the scaffolds.

LIGHTING

Emergency Lighting Unit 567
Electric Cord Co. An automatic emergency lighting unit is described in a 4-page folder. Features outlined are: new type battery, automatic charging, better light, 5-year guarantee. The unit plugs into regular circuit and provides illumination if circuit fails.

Portable Lighting Lines 568
Joy Mfg. Co. A 12-page bulletin on prefabricated lighting and tool lines for industry. The assemblies consist of end connectors and outlets with rubber covered cable, and are watertight and designed for hard usage in setting up emergency or maintenance lights and power lines.

MATERIALS HANDLING

Portable Drum Dumper 569
Gifford-Wood Co. Illustrated data sheet describes a tower for mechanically elevating and emptying containers into high-walled receptacles. Push-button operation makes unit semi-automatic; suitable for various sizes of drums; has special discharge spout to control dust.

Hand Lift Trucks 570
Market Forge Co. A check chart of features to look for in selecting a hand lift or hand pallet truck. This analysis consists of 34 questions relating to safety, performance and ease of maintenance. Also includes information on a hand-truck rental plan.

TRANSPORTATION

Truck Tank Discharge Valve 571
Chem-Valve Corp. A stainless steel discharge valve for unloading bulk liquids is described in this folder. The new design is said to be non-clogging and eliminates the need for heating the outlets in cold weather when heavy liquids congeal.

Dual Wheel Dolly 572
Romay, Inc. A dolly specifically designed for changing truck dual wheels but that can also be used for single wheels is described in this illustrated bulletin. The unit is said to make wheel changing by one man simpler, easier, faster.

Vehicle Sanding Unit 573
Automotive Sandtrax, Inc. Bulletin describes a powered sander for mounting in cars to spread sand for the rear wheels. Sand hopper is mounted in car's trunk with discharge tubes to the wheels. It is controlled by foot pedal and powered by exhaust.

FIRE PROTECTION

Flammable Liquid Storage & Dispensing 574
Protectoseal Co. This illustrated guide explains modern fire-safe methods of receiving, storing and dispensing flammable liquids. Shown are approved drum fittings, vent bungs, self-closing faucets, pumps, drip cans and other accessories.

Non-Flammable Hydraulic Fluid . 575
E. F. Houghton & Co. Dramatically presented in this folder is the story of how the use of a non-flammable hydraulic fluid can

(Continued on next page)

SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE.

READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

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NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item.

FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

January 1955

Please send me the following free data (Remember to fill in your name and address

PLEASE PRINT

Name _____ Title _____

Company Name _____

Street Address _____

City _____ Zone _____ State _____

MAIL POSTAGE PAID CARD FOR MORE DATA

Free Bulletins (Cont'd)

protect personnel, property and production. Approved by Factory Mutuals, the fluid is recommended for use in hydraulic equipment near high heat or open flames.

Fire Pumps 576
Marlow Pumps. Portable fire fighting pumps are described and illustrated in this bulletin, which includes performance data and engine specifications.

INSTRUMENTS

Conductivity Tester 577
Associated Research, Inc. Bulletin describes an instrument for measuring the conductivity of hospital operating room floors, personnel and equipment, in accordance with N.F.P.A. recommendations. Also suitable for ordnance, chemical, paint and refinery plants or where static electricity may be a hazard.

Electronic Metal Detector 578
RCA Victor. Tramp metal, either magnetic or non-magnetic, can be detected by this electronic unit, according to a 4-page bulletin. Suitable for installation on belt conveyors, the detector can be used with a warning alarm or light or set up to stop the conveyor if any tramp metal is present.

MISCELLANEOUS

How to Make Guards 579
Harrington & King Perforating Co. An easy way to make machinery guards from standardized parts is outlined in this informative folder. The five basic parts are shown and typical assemblies illustrated, such as guards for belts, presses, flywheels, etc.

Flexible Hose & Duct 580
Flexhaust Co. Industrial installations of flexible hose and ducts for moving air, dust, fumes, gases and materials are described in this illustrated bulletin. Applications include sawdust removal, spot heating or cooling, abrasive dust collection, smoke & fume removal, dehumidification and air conditioning.

Antiseptic Protective Cream ... 581
C. B. Dolge Co. This folder describes a protective skin cream for use against irritants in cutting oils, solvents, thinners, paints, etc. To prevent bacterial infection, the cream also contains hexachlorophene.

Cut Accident Costs 582
U. S. Envelope Co. You can cut accident costs by getting safety messages right to the worker through the use of paper cups imprinted with safety slogans, according to this folder which also points out the hygienic and morale advantages of providing individual sanitary cups.

New Awards Catalog 583
Williams Jewelry & Mfg. Co. The new 1955 Industrial Awards and Incentives Catalog features the new Green-Cross plaque and ideas for promoting safety programs in the plant or office.

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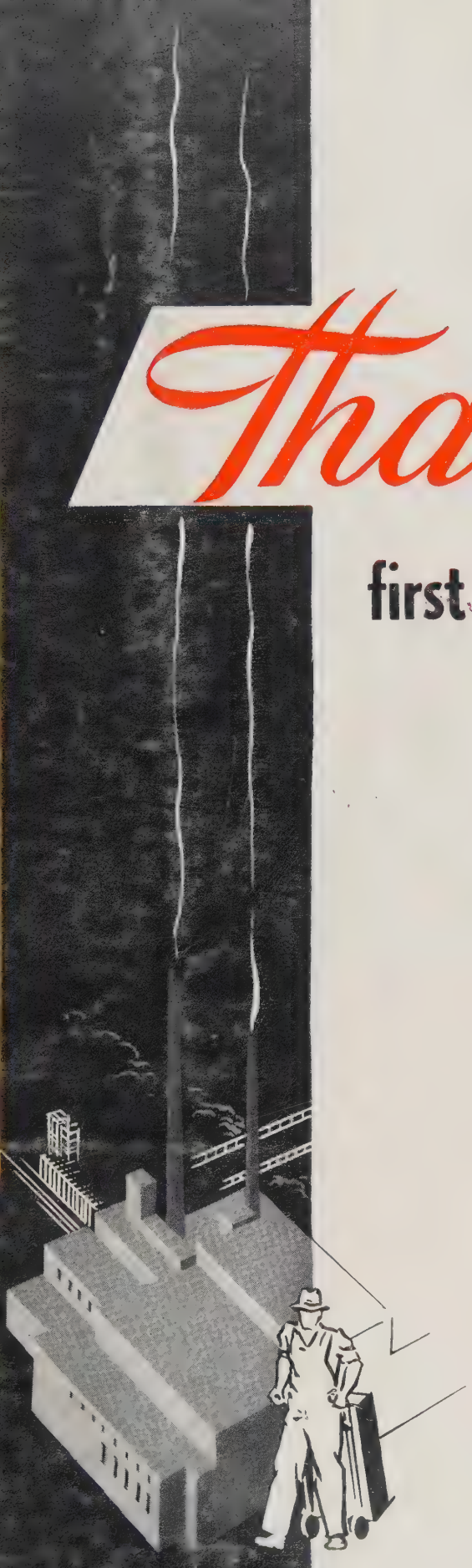

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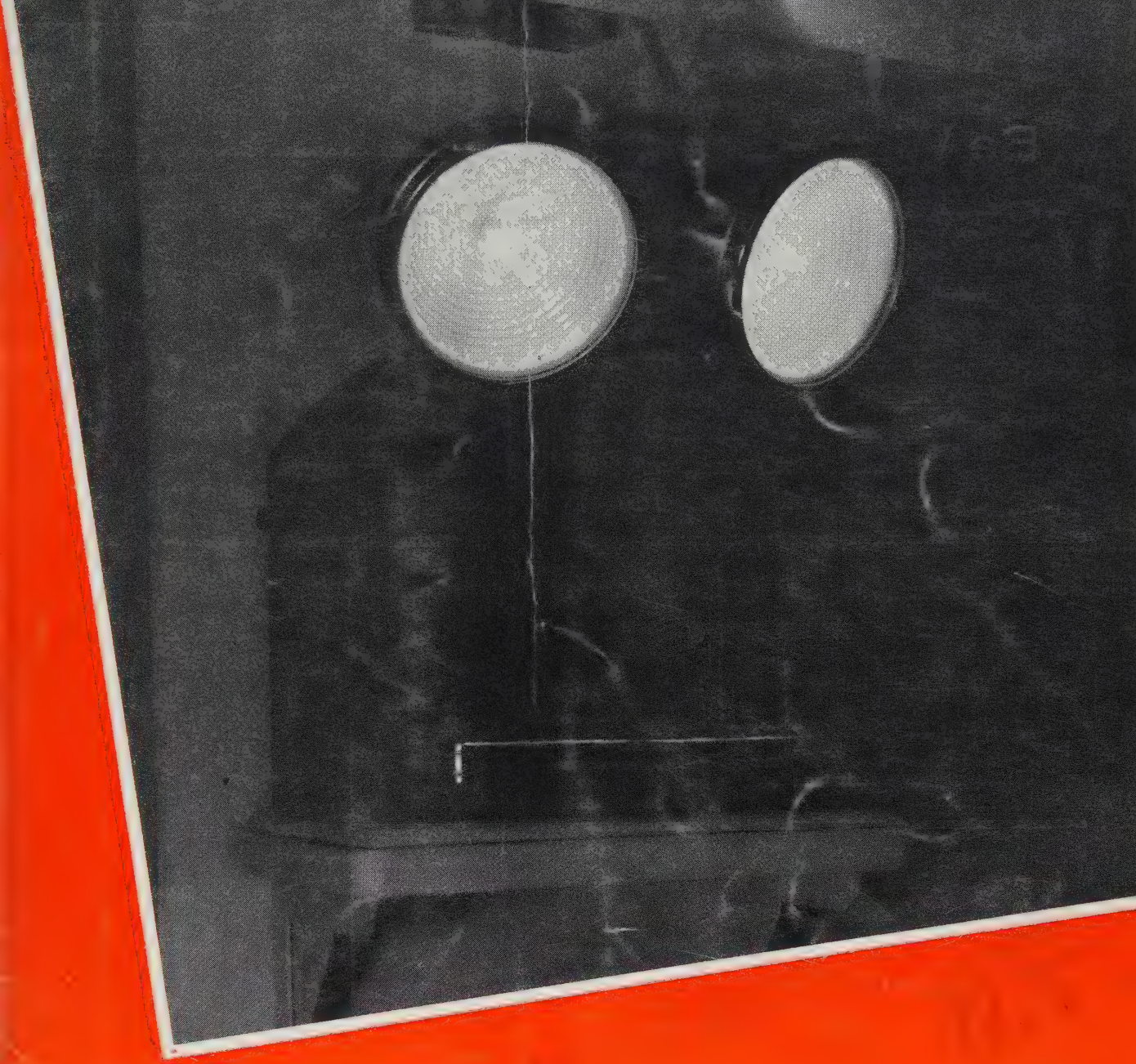

Safety Maintenance and Production

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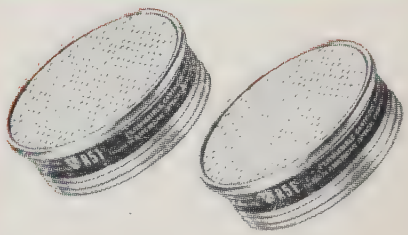
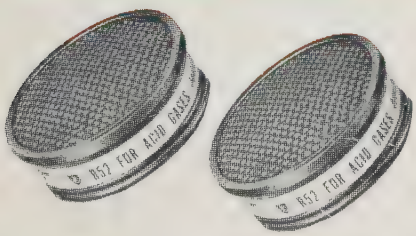
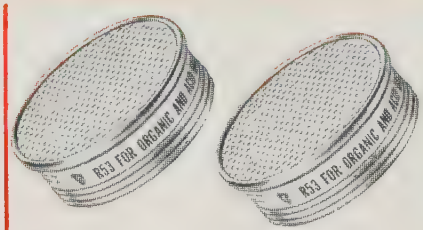


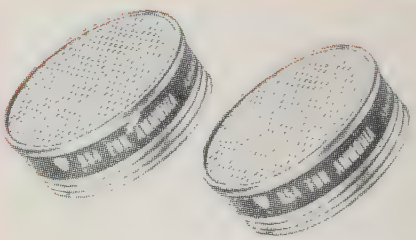
R51 — For light organic vapors and gases of paint spraying, degreasing, dry cleaning. B.M.2304



R52 — For acid gases, and mists of plating operations, pickling tanks, etc.



R53 — For combined acid and organic gases like carbon tetrachloride and acetic acid.



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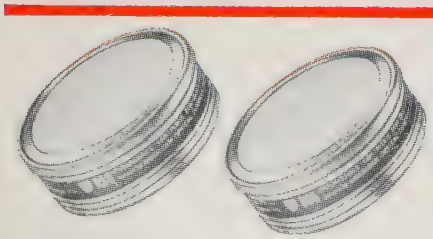
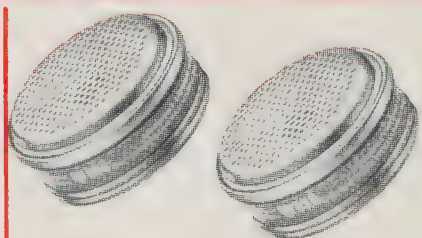


R55 — For those who are exposed to both organic vapors and all dusts not significantly more toxic than lead. B.M.2305



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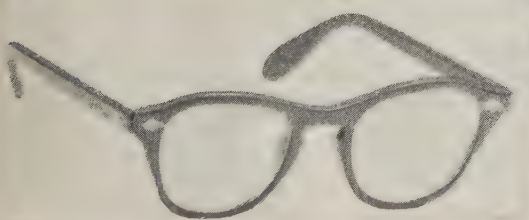

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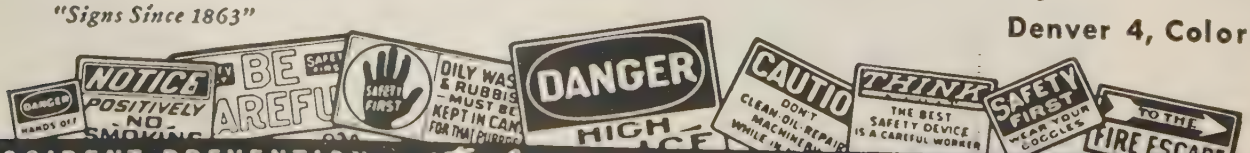

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EST. 1901

VOL. 109, NO. 2 **FEBRUARY, 1955**

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Automatic Emergency Light in an Air Raid Shelter
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AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

It's Safe to Say

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★ LEADERS WANTED

STATISTICALLY, New York cannot be accepted as a criterion of the entire nation and yet its accident figures are significant. According to New York's able Commissioner of the Health Department, accidents are the fifth leading cause of death, and home accidents alone cause roughly 50 percent of all accidental deaths in that city.

It may be argued that industrial management, safety leaders and manufacturers of safety equipment must necessarily concern themselves with combating accidents in industry while home accidents are beyond control and are thus inevitable. Isn't the theory of "inevitability" the same as that which was current in industry a generation ago?

A fatal accident in the home is as great a loss as a casualty in industry and a man killed off the job is just as dead to his family, his employer and to the world as if he had been struck down fatally while working in a plant.

Deaths associated with home accidents loom larger while those associated with disease are shrinking. For example, in New York City last year tuberculosis deaths averaged three a day while accident deaths averaged more than seven a day. And of those seven deaths each day, three to four were deaths from accidents occurring in homes!

Thanks to campaigns of the various tuberculosis associations and their program of public enlightenment, and research, this dread disease does not make the once all-powerful inroads on community health. Cannot industrial leaders and safety experts in the various communities of the nation at large perform miracles through a unified campaign to reduce home fatalities?

Obviously, accidental injuries and fatalities are not inevitable. That fact has been proven in industry by dint of a never-ending campaign of vigilance. Here again statistics reflect the effectiveness of concerted action. In the past ten years, there has been a decrease of 44 percent in deaths from occupational accidents in New York.

However, few official or voluntary agencies have accepted direct responsibility for the control of accidents in the home. In New York, home accident prevention is a function of its Health Department, according to Health Commissioner, Dr. Leona Baumgartner.

It should be a logical function of every health department whose people have intimate and continuing contact with families and people in their homes. Those local departments spurred on by safety and industrial leaders teach families respect for accidents and what they can do about prevention of death and disability.

In New York there is a continuous accident prevention program right in the Health Department for its own people. They guard against hazards in laboratories, in offices, in health centers and child health stations. In those child health stations, home safety education programs have been inaugurated to reach down to parents and families in their homes. This affords an excellent opportunity to talk about slips and falls, electrical hazards, burns, poisoning and other leading causes of home casualties.

Safety education is not formal or routine. Dr. Baumgartner emphasizes that it does not consist merely of handing out leaflets and booklets. Instead, the campaign should be individualized by discussion between parents and the local health departments. And it is here that safety, maintenance or production experts can "brief" their local municipalities on the increasingly prevalent evil of home accidents.

Local libraries, drug stores, theatres and merchants can be enlisted in a constant drive to cut down home fatalities. Newspapers can and will open their columns to home safety appeals just as the press has cooperated for industrial safety over the years. But it takes a local leader or a vigorously acting committee to spearhead a drive which should be continuing.

Just where would the industrial accident picture be today were it not for the precept and example of a handful of pioneers? Do we ever hear now that, "Joe works in the steel plant so he's *bound* to get his some day"?

Any menace can be controlled by know-how and eagerness. What greater challenge confronts our nation than a toll which, dramatically or not, snuffs out upwards of 35,000 lives year year? H.A.

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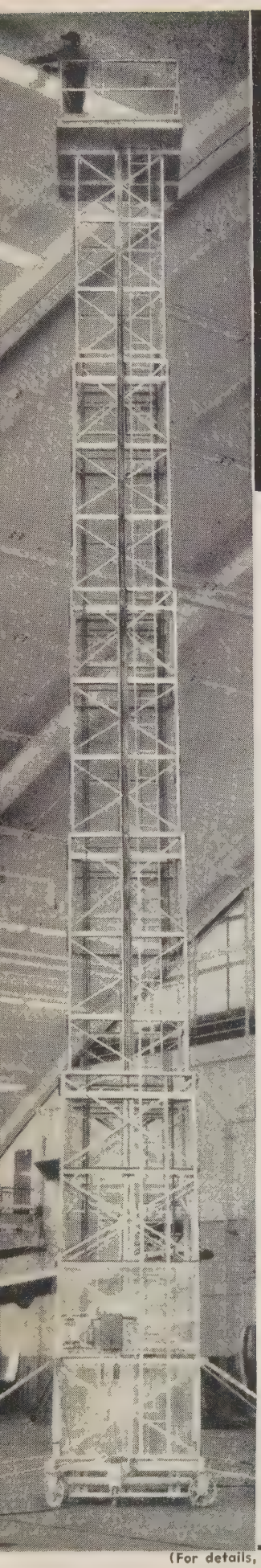

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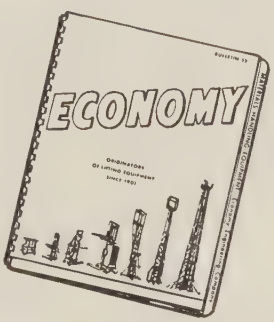

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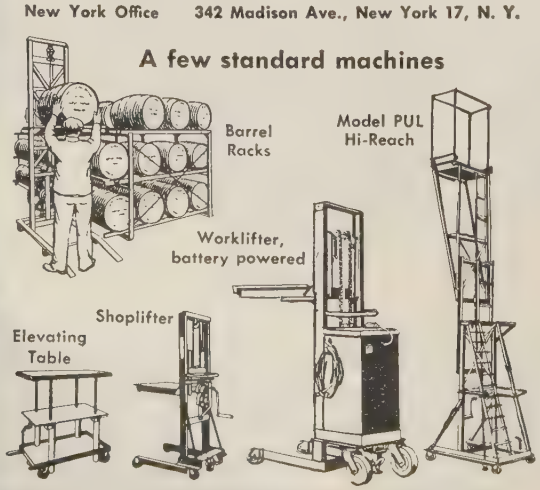

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THE FUTU

E. Lansing, Mich. *Feb. 14–17*

Fourth Annual Industrial Ventilation Conference (Michigan State College). James C. Barrett, Michigan Department of Health, Division of Occupational Health, Old Dewitt Road, Lansing 4, Mich.

New Orleans, La. *Feb. 27–Mar. 1*

Southern Safety Conference and Exposition (Jung Hotel). W. L. Groth, Executive Director, P. O. Box 8927, Richmond, Va.

Philadelphia, Pa. *March 8–9*

Twenty-first Annual Philadelphia Regional Safety and Fire Conference and Exhibit (Broadwood Hotel). Walter W. Matthews, Managing Director, Philadelphia Safety Council, 17th & Sansom Streets, Philadelphia 3, Pa.

Houston, Texas *March 21–22*

Sixteenth Annual Texas Safety Conference (Rice Hotel). J. O. Musick, General Manager, Texas Safety Association, Inc., 830 Littlefield Bldg., Austin, Texas.

Pittsburgh, Pa. *March 29–31*

Thirtieth Annual Western Pennsylvania Safety Engineering Conference & Exhibit (Hotel William Penn). H. H. Brainerd, exec. manager, 605 Park Bldg., Pittsburgh 22, Pa.

Indianapolis, Ind. *March 30–31*

Eighth Central Indiana Safety Conference & Exhibit (Claypool Hotel). Indianapolis Safety Council, 320 N. Meridian St., Indianapolis, Ind.

Kansas City, Mo. *March 31–April 1*

Central States Safety Congress (Municipal Auditorium). George M. Burns, Director, Kansas City Safety Council, 419 Dwight Bldg., Kansas City 6, Mo.

E SHOWS

New York, N. Y. *April 11–15*

Twenty-fifth Annual Greater New York Safety & Exposition (Hotel Statler). Harold C. Mesch, general chairman, Greater New York Safety Council, Inc., 60 E. 42nd St., New York 17, N. Y.

Niagara Falls, N. Y. *April 19–21*

Fifteenth Annual Western New York Safety Conference, in cooperation with the American Society of Safety Engineers (Niagara Hotel). Patsy E. Gismondi, Executive Secretary, 1436 Delaware Ave., Buffalo 9, N. Y.

Cleveland, Ohio *April 26–28*

Twenty-fifth Annual All Ohio Safety Congress & Exhibit (Hotels Cleveland and Hollenden). A. W. Moon, Congress Manager, Industrial Commission of Ohio, Safety & Hygiene Div., Columbus 15, Ohio.

Grand Rapids, Mich. *April 26–28*

Twenty-fifth Annual Michigan Safety Conference (Pantlind Hotel and Civic Auditorium). R. H. Goring, Executive Secretary, Michigan Bell Telephone Co., Detroit, Mich.

Syracuse, N. Y. *May 16–18*

Central New York Safety Conference & Exposition (Hotel Syracuse & Hotel Onondaga). Walter L. Fox, Manager, Safety Division, Syracuse Chamber of Commerce, 351 S. Warren St., Syracuse 2, N. Y.

Chicago, Ill. *May 16–20*

Materials Handling Exposition (International Amphitheatre). Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

Winston-Salem, N. C. *May 18–20*

Twenty-fifth Annual North Carolina Statewide Industrial Safety Conference (Robert E. Lee Hotel). H. S. Baucom, Safety Director, North Carolina Industrial Commission, Raleigh, N. C.

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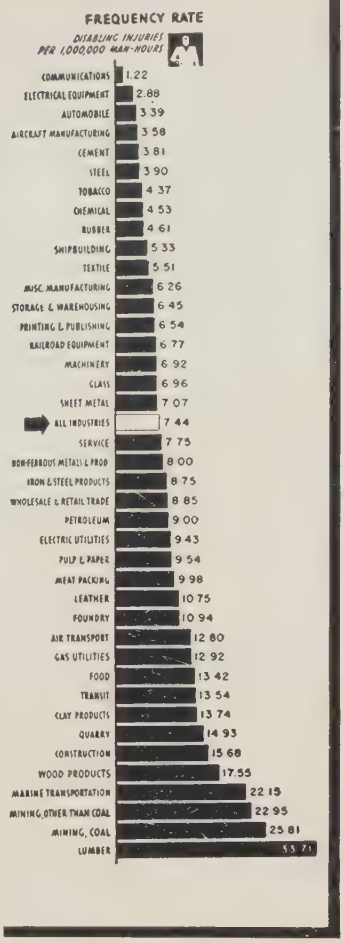

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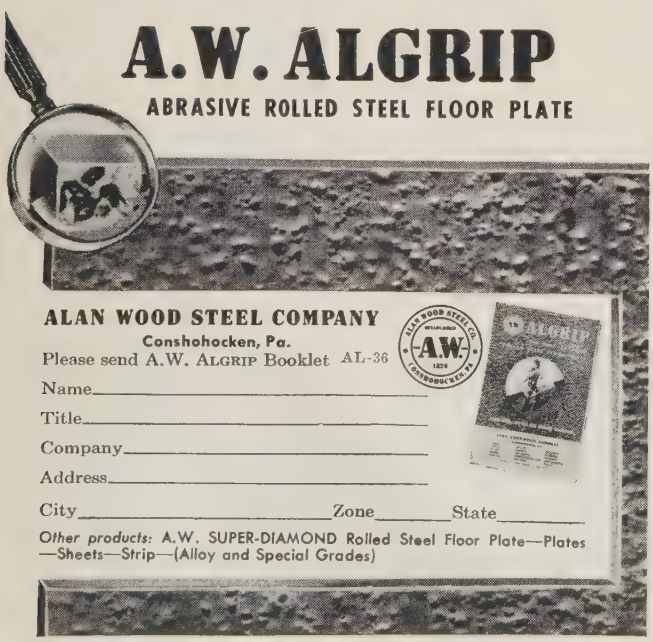

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Safety Shoes 14
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Seam-Free Coated Glove 24
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Heat Resistant Gloves 25
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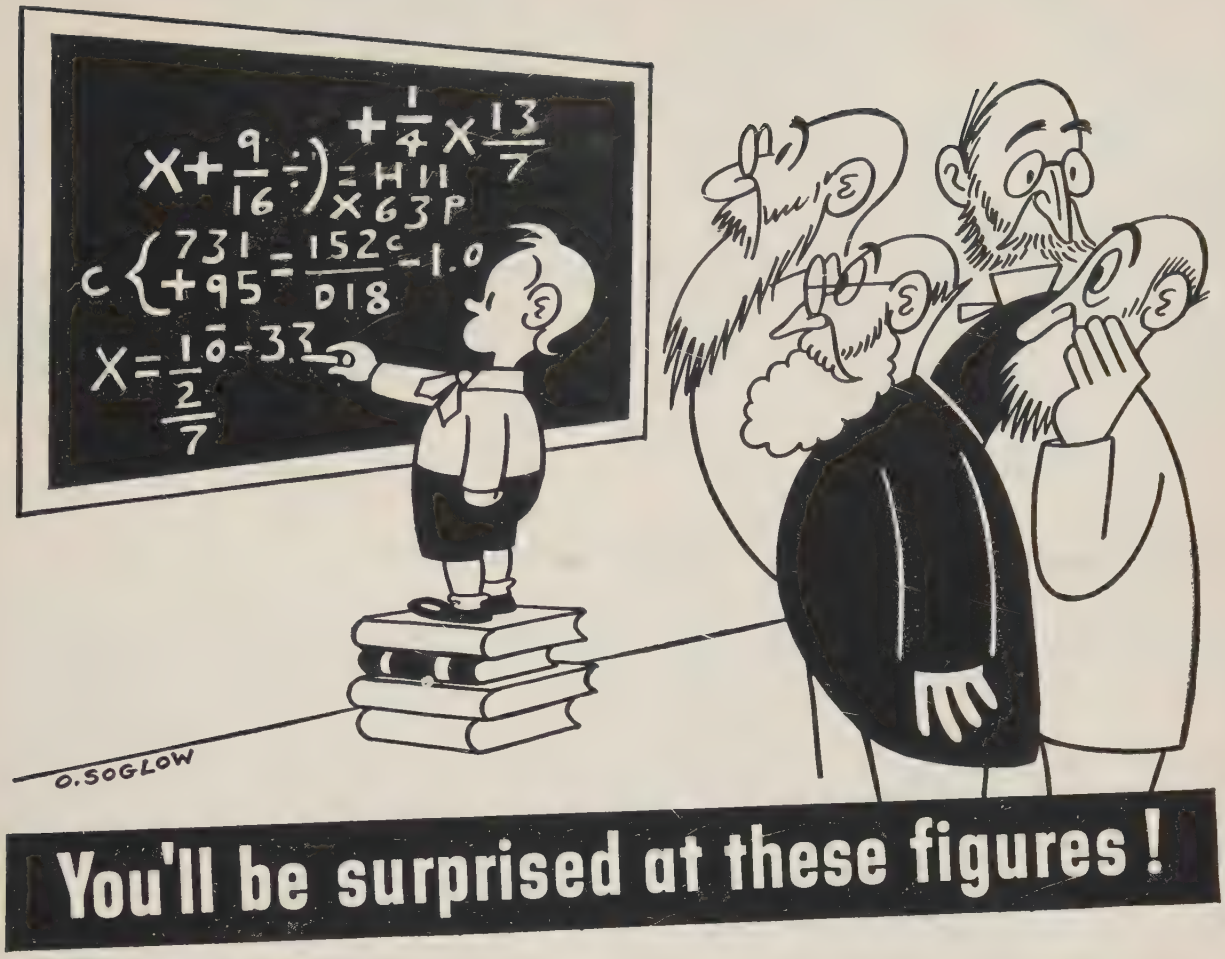

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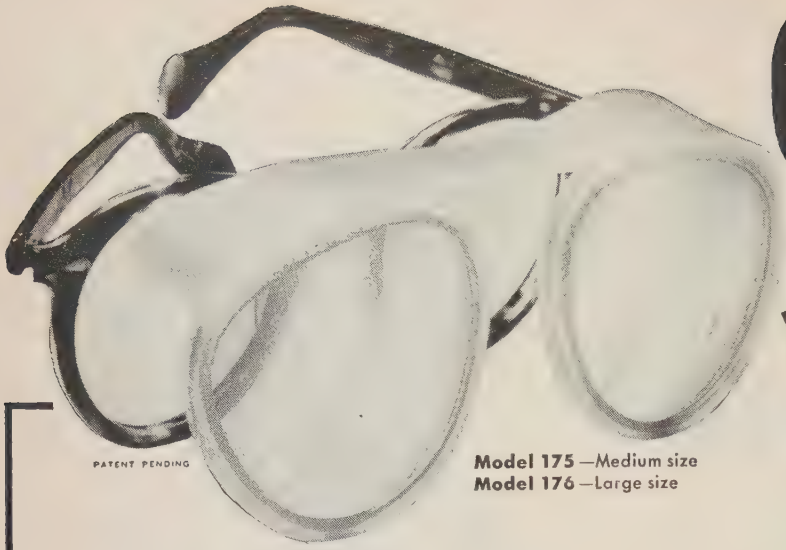

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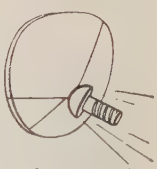
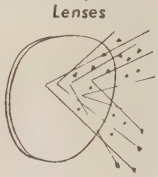

Shatterproof Lenses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Frames available in two sizes: Model 175 Medium for 46mm lenses.
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Frame colors: translucent white or green.

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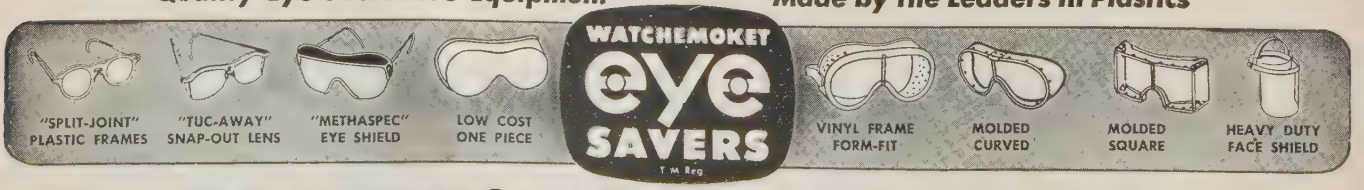

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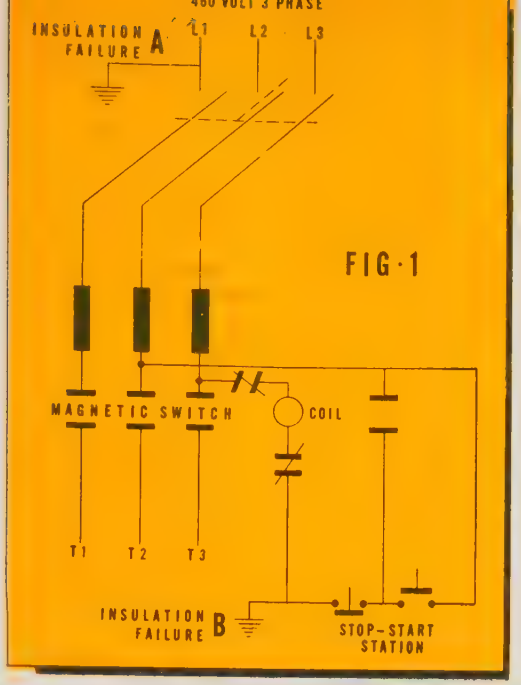


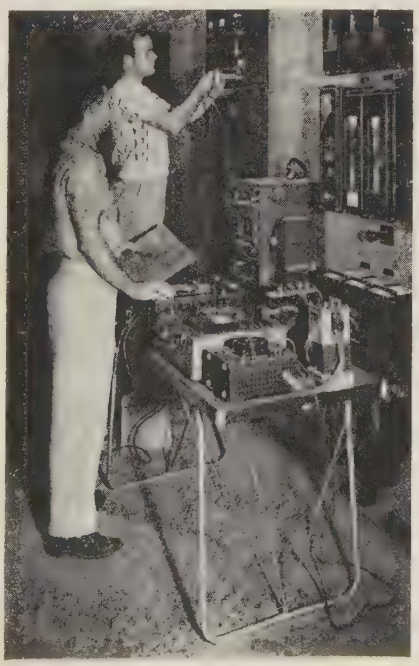
Chart shows two grounds (at A and B) from various insulation failures, which have made normal operation of start-stop button unresponsive.

PART 1

False Starts Electrical Grounds and Accidents

Electrical engineers calibrate relays on control system here.

Engineers here develop continuity checks on control circuits.



By PAUL C. ZIEMKE

RATHER WIDELY scattered but persistent reports from different sections of industry indicate that, when insulation failures occur simultaneously on circuits employing the combination of stop-start stations and magnetic switches, false starts may occur. Fatalities and serious injuries have resulted from such sudden starts on lathes, milling machines, planers and radial drills.

Since some false starts were charged to accidental or unauthorized pressure on the start button several manufacturers have developed switch models equipped with protective stirrups and other locking devices which employ a padlock to prevent operation by accidental pressure or by unauthorized personnel. All this is good preventive maintenance and will certainly help reduce some rather peculiar accidents resulting from false starts. This article, however, concerns itself with safeguarding the control circuit against shunting type grounds, which can prove so viciously effective in starting machines at the least desired moment.

Failure to Stop

While a false start can be devastatingly destructive in its own right, equally important is the prob-

lem of failure to stop. Upper and lower limit switches of elevators and hoists may fail to stop motor travel, liquid level controlled pumps fail to stop, and pressure regulating devices fail to perform as planned.

Actually, the failure to stop may occur even more readily than the false start. Once actuated with current flowing in the switch coil, only 50 percent of the line voltage will hold the switch mechanism in position against the forces of gravity tending to force it open. However, to start a machine operated with a magnetic switch, fully 85 percent of the line voltage must be impressed across the coil terminals to develop sufficient flux density in the laminated pole pieces to snap them upward into place.

How can a false start occur on the conventional magnetic switch, stop-start station combination used for across-the-line starting of alternating current motors of 25 HP or less? While insulation failures can cause false starts in even the simple, one-stop-start station type of installation, a complicity of circuits may readily increase the probability of dual grounds through insulation failures in the extended wiring. In Figure 1 there is an accidental ground at point "A." It is an insulation breakdown which could be produced by any number of conditions. Probably the most prolific source of trouble is that produced by acid fumes in electroplating shops and chemical recovery plants

One Bad Situation

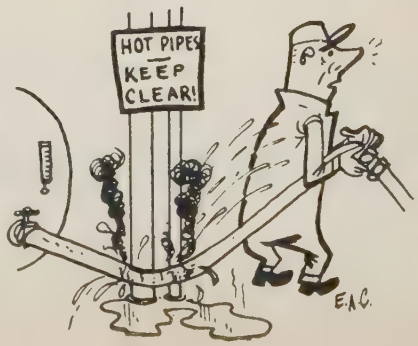
One particularly bad situation occurred where heated pickling acid fumes were liberated in spite of fume hoods to reach the wiring of a special type of hoist identified as a "liner hoist." Eight different interlocks were employed on these rigs to make them as nearly automatic in function as engineering brains could devise. Insulation failures due to the hot fumes, plus the corrosion of switch contacts, made the installation something of maintenance man's nightmare. The combination of troubles pyramided to such an extent that relief was sought through devious channels.

The line voltage was halved to reduce the torque, and thus prevent the hoist cable from pulling apart if the upper limit switch failed to open the magnetic switch. At the same time another approach consisted of the installation of a tension device in the cable attachment, which tended to elongate as the hoist stalled in the maximum upward travel position. This was, of course, a bit of wishful thinking since it was merely multiplying the upper limit switches. For that particular installation electronics have been abandoned for an hydraulic drive which has no vulnerable wiring or delicate switch points to "freeze" at inopportune moments.

Another source of trouble is found in machine shops which work metals or materials producing fine dusts with good current-carrying characteristics, such as high grade graphite, aluminum, etc. These penetrate to the inner recesses of conduits and switch boxes to produce frequent insulation failures. One simple and effective bit of preventive maintenance for this bad actor is to open the conduit or switch cover and clear the accumulation out with compressed air or a vacuum.

Rare are the machine shops operating without coolants used in great volume and variety to keep the temper intact in cutting tools. Confining the all-pervading spray of hot oil-water emulsion and keeping it out of the conduits and wiring troughs can beat the best electrical maintenance brains. These coolants can become doubly dangerous when certain admixtures are made up at the direction of the metallurgists. One such extremely bad admixture consists of a combination of sulphur and carbon tetrachloride. Of the two, perhaps the worst offender is the carbon tetrachloride, which not only is a health hazard, but also has an unfortunate affinity for rubber insulation. Synthetic insulation is somewhat less vulnerable to the attacks of this brew, yet is not completely immune. *(Cont'd on page 42)*

For



afety Rules

landling Rubber Hose

By JAMES E. HOLLY
Hose Development Engineer
Thermoid Company
Trenton, N. J.

DO . . .	WHY . . .
1. Use correct hose for material carried.	1. Pumping acids, for instance, through a water hose will cause hose leakage and eventual failure, with damage to equipment and personnel.
2. Use hose of correct pressure capacity.	2. Too high pressure will weaken hose and cause failure, with possible damage to equipment and injury to personnel.
3. Select couplings carefully as to type, size and material and install correctly.	3. A poor connection means leakage, poor performance and possible failure.
4. Have shut-off valve accessible.	4. To stop flow quickly in case of sudden or accidental failure of hose or coupling.
5. Avoid excessive lengths.	5. Excessive lengths present a tripping hazard to personnel.
6. For steam, use a wire braid hose or hose specifically designed for steam.	6. Steam under pressure will burn and weaken an ordinary hose resulting in bursting, with damage to equipment and injury to personnel.
7. Tighten couplings periodically.	7. To prevent leakage and eventual failure at coupling.
8. Repair cuts, worn spots as soon as discovered.	8. Will prevent sudden, complete rupture later.
9. Use enough hose to reach.	9. Pulling and stretching hose will weaken it, especially at couplings; with eventual failure and spillage of material carried.
10. Wear protective clothing (goggles, rubber gloves, apron) when handling hot or corrosive material in a hose.	10. To protect eyes, skin and clothing against contact with material in case of spattering or failure.
11. Check hose for breaks, loose couplings before using.	11. Accident prevention is more efficient than first aid.
12. Provide means of stopping flow when handling corrosive or hot materials by means of valves or nozzles.	12. Quick stopping of flow may be required in an emergency.
13. Protect hose from accidental damage from vehicles, falling objects.	13. Will weaken and damage hose.
14. When handling flammable materials such as gasoline be sure hose has a ground wire.	14. To prevent sparking from static electricity.
15. Know your hose types and particular applications.	15. Knowledge of hose and correct applications will eliminate accidents caused by using wrong hose.
16. Watch the bending radius.	16. Continuous bending below allowable limit will weaken hose at bend and cause eventual failure.
17. When using nozzle under high pressure, increase pressure gradually and grip nozzle firmly.	17. Prevents hose whip and spillage of material.
18. Keep hose away from hot surfaces and heat outlets.	18. If material carried is flammable, it may ignite. Will damage hose and cause rupture with spillage of material.
19. Never hang hose on a nail, where it is forced to take a sharp bend.	19. Continued undue strain can result in permanent deformation and cracking.
20. Store hose on flat surface (shelf, floor, etc.) in cool room, not exposed to direct sunlight.	20. High temperatures and direct sunlight will tend to cause premature aging of rubber and possible sudden rupture when used.
21. Use valve or shut-off nozzle to stop flow of material.	21. Kinking of hose to stop flow through it may rupture carcass and cause burst at low pressure.

Pictures by courtesy of Thermoid Co.

FOOT PROTECTION SERIES
more articles in March and April

A SAFETY NOTES ON

By AUGUST R. SAUER
Safety Director
Continental Paper Company
Ridgefield Park, New Jersey

FEBRUARY 16, 1953 had been one of those particularly "rough" days that we all experience on occasion, and upon arriving home I retired rather early. It seemed as though I had just fallen asleep, when I was startled by the telephone ringing. I turned on the light and tried to focus my eyes on the clock. It was 12:40 A.M.

Normally one does not expect a social call at that hour, at least I don't. I reached for the phone with a sense of foreboding. "Hello." Then came the reply any safety man dreads to hear, "Sorry to bother you at this hour, but one of the men, Moses Stuck, has just met with an accident." I instantly recognized the voice of the night nurse on duty.

"How bad?" was my first question. "Well, he was standing on the frame of a Beloit reel, and his toes were caught between the meshing quarter quadrant gears. I rendered first aid and am going to send him to the hospital for further attention."

"But how much of the foot has he lost?"

The nurse's reply bewildered me for a moment. She said, "Thank God he was wearing safety shoes."

I told her I didn't understand, not that I didn't have the utmost confidence in safety shoes, but I also knew how much power was associated with those gears. They were part of a raising and lowering mechanism, designed to handle many tons. How could safety shoes offer any protection in a situation such as this?

However, surprising as it may seem, this safety shoe saved Moses' toes and foot from serious injury, and before long he was able to resume his normal duties.

Did I hear you say Luck? Well then, how about the drum of ink that fell on Al Clancy's toes, slightly marking the steel toe cap, but leaving Al's toes uninjured? And how about the 800-pound load of tubing that shifted, causing the 4-wheel hand truck on which it was loaded to roll forward and over the protected toes of Benny Dickerson? Luck? I wouldn't say so.

Luck or Planning?

Moses has his foot and Al and Benny avoided injury because a planned program was put into effect, which sold people on the value of protecting themselves against the unexpected. And there are many of our workers, not mentioned here, who have benefited by this program.

I mentioned a "planned" program. Why did we consider such a program in our plant? Is our operation more hazardous than other types of industry? Do our people have less concern for safety than the average worker? I certainly doubt this. Well then, why should we, or any industry for that matter, be interested? Allow me to present our thinking, which perhaps reflects the thinking of many other industries.

How Our Program Grew

Our company, one of the largest single plant paperboard manufacturers in the country, is by no means a new organization. In fact, our birthdate is the same as that of organized safety, which makes us over 40 years old. Until the latter part of 1952, we encouraged the use of safety shoes, but made no special effort to get people to wear them. In September of that year, management began placing more and more emphasis on safety.

Consequently, analyses were made of past and current accidents and injuries, bringing to light a sufficient number of toe injuries to warrant special attention. Of course, the importance of training in the reduction of accidents was recognized. But it was also recognized that an unexpected, and in some instances an uncontrollable situation can develop, in which case injury may be prevented or minimized by the use of personal protective devices. With

DIRECTOR'S...

A SAFETY SHOE PROGRAM

this thought in mind we decided to institute a plant-wide safety shoe program.

What are some of the things that come to mind when planning such a program? First, the product used should be of the highest quality, manufactured by an organization with sufficient experience to be able to give maximum comfort, consistent with adequate protection. Second, it is desirable to make the product easily available to the employee. Third, careful attention must be paid to fitting. Fourth, records should be maintained in order to simplify handling repeat orders. Fifth, the employee should be made aware of the fact that the only difference between a safety shoe and a conventional shoe is the steel cap in the toe. It is not constructed with a lot of "built-in gimmicks," to add weight and give discomfort. Sixth, the proper type of shoe should be recommended for the job the employee is doing. And last, but not least, although not absolutely necessary, it is extremely helpful to the success of the program, if management subsidizes a portion of the cost.

Selling the Program

Using this outline we selected the product of a reliable manufacturer. The program was announced on the bulletin boards. A small stock of shoes was ordered, and arrangements were made to handle fitting and disbursing through the First Aid Room. Careful attention was paid to comfort, and at the outset of the program the manufacturer's representative spent days at the plant, assisting in fitting employees. As Safety Director, I personally took time to participate in this work, which also afforded the opportunity of personal contact with each and every employee.

Easy as That? Oh, no . . .

I do not mean to infer that the program was immediately accepted. After all, it is human to resist change or new ideas, and while the majority of our people subscribed wholeheartedly, some did so with mental reservations. Others had the usual, time-worn objections: The shoes were too heavy, they were uncomfortable, and the steel cap made one's toes cold in winter.

Of course these complaints are not based on fact, but there is a basis for their origin, and a program cannot be successful if they are brushed off lightly. True, a minority of the complaints are just plain "gripes," but in the majority they are as real to the complainant as if they actually existed. Why? Let's take the first, "the shoes are too

Reenactment of accident shows heavy drum of ink on employee's toe. This could have been a serious injury accident, but . . .

. . . the steel toe cap in the safety shoe took the blow, and only the leather of the shoe was torn, not the man's foot.

heavy." This complaint dates back to the days when safety shoes were in their infancy. They were available only in bulky, high topped styles, which made them appear to be twice as heavy as they actually were. Many of our people still remember this experience, or have heard someone else speak of it.

However, just because we may have been dissatisfied with an automobile of 1930 vintage, is no reason why we should not avail ourselves of a present day modern car. The science of manufacturing safety shoes has also advanced, and we should not be unduly influenced by some unsatisfactory experience we may have had many years ago. Today's safety shoe is strictly modern in appearance, and available in every design afforded by the conventional street-wear shoe. In fact, it is impossible to distinguish between the two, and the only difference in weight is that of the thin steel cap over the toe area.

The statement that the steel cap causes discomfort is most easily disproved. Rather than cause discomfort, the cap actually contributes to comfort, as it maintains the shape of the toe at all times. If the shoe is properly fitted it will give no discomfort.

As to the toes getting cold in winter, this complaint is also a carry-over from the early days of safety shoes, when the underside of the cap was uncovered. The better designed shoe of today provides a leather liner on the underside of the cap, not only preventing discomfort, but also preventing unnecessary wear of socks.

No attempt was made to make this a mandatory program, but every effort was made to get 100 percent compliance. As time went on, workers began to realize that they were getting good wear out of their shoes, making it economical to comply with the program. A payroll deduction plan made it simple for them to make their purchase. Most important, they were impressed by the number of toe injuries that were avoided through the use of this protective footwear.

At this point, just a word of caution. Personal protective devices must never be used as a substitute for training. Jobs must not be permitted to be done thoughtlessly, depending on the protection afforded by these devices. Not one thing in a safety program should be supplanted by the use of protective devices. Every well organized safety program includes the use of protective devices, not to prevent the accident, rather to eliminate or minimize the injury in the event the unexpected should happen to occur.

Well, there is an old saying that "The proof of the pudding is in the eating." What has this program done for our employees and management? Prior to instituting this program late in 1952, only 5 per cent of our people used safety shoes, and during this same period we averaged 31 toe injuries a year, 13 of which were of a serious nature. By the end of our first year of the program, 68 per cent of our people had voluntarily subscribed and our toe injuries dropped to 13, 5 of which were serious. At this writing 97 per cent have complied and we have had no toe injuries in 1954.

Is this a practical and beneficial program for employee and management alike? Suppose you answer the question. And while doing so, don't forget it can pay off for you too —if you are "on your toes."

Pictures by courtesy of Continental Paper Company.

Materials Handling Show

THE 1955 National Materials Handling Exposition will be the most comprehensive in the eight-year history of the show, it was disclosed by Clapp & Poliak, Inc., New York, founders and producers of the event. More than 200 companies will participate and their displays will cover an area of 115,000 square feet of booth space during the week of May 16 to 20 in the new exposition hall recently completed as an addition to the International Amphitheatre, Chicago.

A Materials Handling Conference will be held concurrently with the exposition. The theme for the show and conference is "The Concept of Obsolescence," selected because it emphasizes the rapid out-moding of handling equipment. Most of the handling devices introduced during the exposition's first year in 1947 are already out-moded because of extremely rapid advances in this new industrial science.

One of the important new aspects of the show will be the emphasis on new systems for handling rather than on particular single types of equipment. Although fork lift trucks and their accessories will play an important part, other types of equipment will be represented to a far greater degree than formerly.

Advance registration cards may be obtained without charge from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

A Record Year?

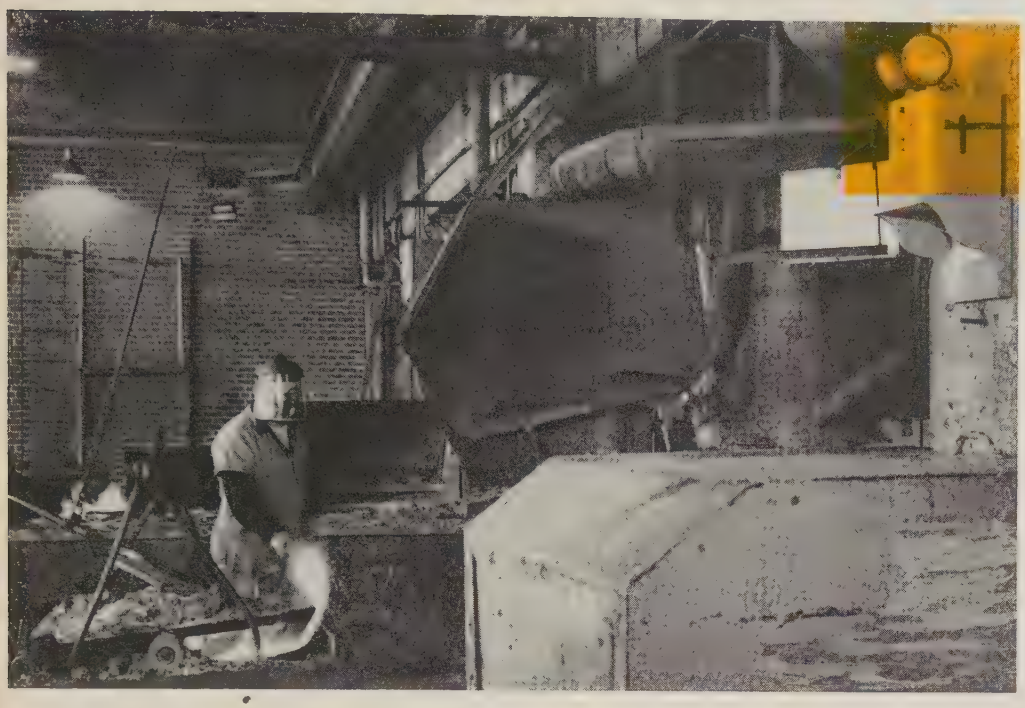
SECRETARY of Labor James P. Mitchell has predicted that American industry completed the year 1954 with the best safety record yet achieved.

The all-manufacturing rate for the first 9 months stood at 11.7 injuries per million man-hours, according to preliminary reports prepared by the U. S. Department of Labor's Bureau of Labor Statistics. This was the lowest rate for the first 9 months of any year on record. The previous low was 13.9, in 1953. Since the last three months of the year usually show a decline in injury rates, the final average for the year is likely to better the 1953 figure of 13.4 by a considerable margin.

The slight increase which occurred in the injury rates in July and August followed the usual seasonal pattern. The rate for September again fell to 11.5. The rate for each of these months was well below that for the corresponding period of 1953, or of any other previous year.

Although many individual industries showed seasonal increases between the second and third quarters of 1954, the third quarter rates were still below those for the similar period in 1953 in most instances.

WHY EMERGENCY LIGHTS?



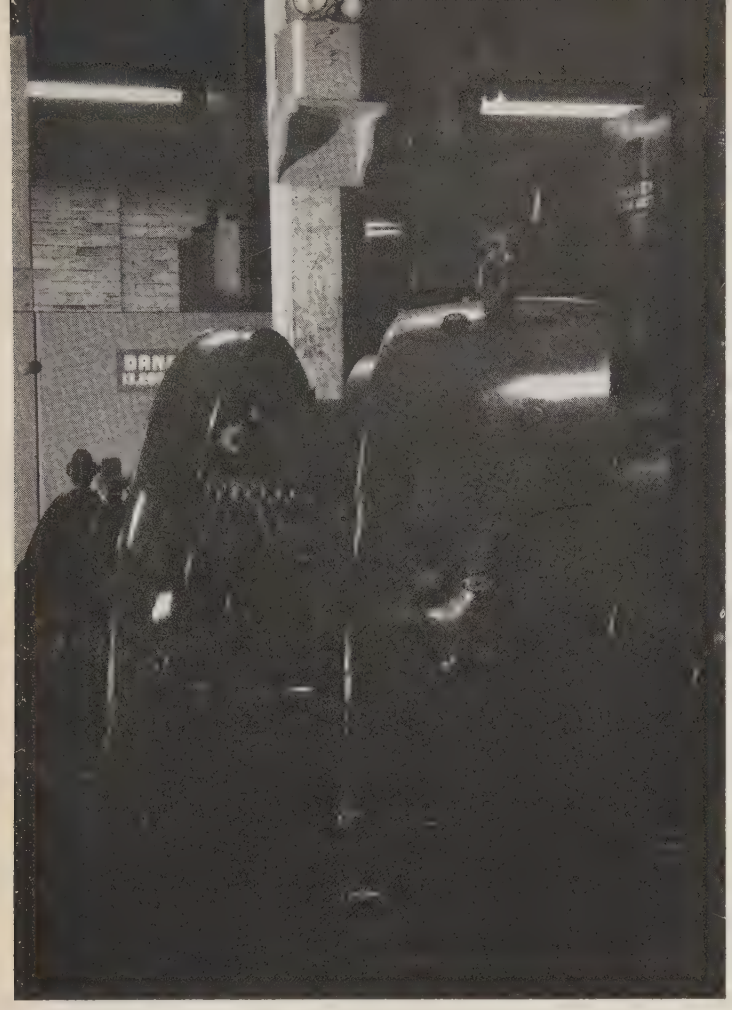
Emergency light at right in picture is a primary safety measure for smelting operations because of the fire hazard.

Generator control board might be dangerous for hours after power failure. Emergency light at right is therefore essential protection.

By E. J. FITZMAURICE
Manager, Commercial Engineering
Exide Industrial Division
The Electric Storage Battery Company

EMERGENCY LIGHTING PROTECTION is not a new element recently injected into plant safety programs. For more than 30 years, management and safety engineers of a large number of industrial operations have realized the dangers inherent for employees, property and the control of production in any sudden, unexpected lighting failure. Many eliminate such dangers by installing emergency lighting and also emergency power protection in all vital areas. These areas vary from plant to plant. For example: one may need only 3 or 4 units to provide ample protection, while another will require as many as 200 units. Generally speaking, emergency lighting is needed in all areas within a building where employee safety or continuous operations are involved.

Insurance companies have figured that electric power interruptions and the birth of triplets arrive at any given location with about the same frequency—that is, 8,000 to 1. This means that your chances of getting electric service whenever and wherever you flip a switch are unusually good. Power companies take every practical precaution to prevent service interruptions. Their record is outstanding, but at any given moment something beyond their control is happening somewhere in the U. S. that snaps power lines and causes total "black-outs" over wide areas.



Motor generator at left needs protection of emergency light above it should power fail.

Unexpected injuries require constant lighting for dispensary even when power fails. Unit is at top.

An automobile accident occurs every minute, a fire every 30 seconds, and lightning takes a swipe at the earth 3 or 4 times a second. Innumerable storms—rain, snow and sleet—damage power transmission lines. Where or when any of these threats to electric service will occur —nobody knows. Fortunately, a very large majority of these unavoidable "blackouts" last only a few seconds or minutes, but there are many which last for hours.

Electric service interruptions are frequent enough and the dangers of sudden lighting failure are severe enough that almost every state and every industrial city or town has laws requiring the use of emergency lighting. Many municipal codes require that owners or operators of buildings where 25 or more people assemble after dark, for work or recreation, shall provide and maintain a separate emergency lighting system approved by the Electrical Bureau and Underwriters' Laboratories. Adequate emergency lighting protection must be provided for aisles,

(Continued on page 47)

Emergency light unit is must in cafeteria to avoid panic, point way to exits, and guard against injuries should lights fail.

Toxic and corrosive chemicals used in lab make emergency lighting unit at left above imperative protection for workers in case of sudden power loss.

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BUILDING & EQUIPMENT
MAINTENANCE SERIES
next article in March

THIS BUSINESS OF MAINTAINING

What to look at . . . and for

1. Piles and foundations
2. Structural framework
3. Walls and copings

4. Floors and drains
5. Roofs and flashings
6. Windows and glazing

7. Partitions
8. Painting
9. Plumbing

10. Electrical work
11. Heating
12. Fire and safety inspections

By RICHARD S. AUSTIN
General Manager
Maintenance & Construction

American Cyanamid Industrial Division
Warners, N. J.

THE BUSINESS OF maintaining buildings costs industry about 2 billion dollars a year. Moreover, industry is adding approximately 10 billion dollars of new construction a year and demolition lags far behind that figure.

My job is to keep the buildings in as near original condition as possible. This is not a very difficult task with a new plant, but if I have inherited one that has not been properly maintained, the question of how far to go with rehabilitation is important. At this point we must consider plant policy—some companies like to maintain the plant buildings for show purposes; others use maintenance only for functional effectiveness.

Probably the most outstanding building of our time from the maintenance viewpoint is the 21-story Lever House in New York City, now called "the building that should never grow old." In this building, glass has been used for the outer walls and monel metal for flashings, roofing sheets, etc. It is, in fact, a sort of maintenance Utopia. The cost was far greater than can be afforded for industrial buildings, but Lever House shows what can be done with proper design and knowledge of local conditions.

Each building must be considered separately because of the different conditions encountered: What is the nature of the products manufactured? Are there strong acid fumes? Is the building wet from water or steam? Are the foundations built on piles, so that deterioration due to dry rot or borers will cause settling and affect the walls and floors? What protective coatings will give us the best life over a period of years?

There is no real measure of the life expectancy of buildings. Those that are subjected to extreme moisture, fumes, condensation, and other severe conditions may not have so long a life as others of the same type, unless they are maintained more carefully and at a much greater cost. In general, any building that is structurally safe and sound will last many years if it is well maintained. We have only to look at some of the old homesteads that date back over 100 years to realize it does not take an extremely strong building of concrete and steel to last a long time.

The view that the attention given to buildings should depend upon their life expectancy is dangerous. We know of "temporary buildings" erected for a 5-year life expectancy that are still in use after many years. It is best to put all buildings on a par when setting up a maintenance program unless some of them are

BUILDINGS

very old and decrepit, and it is expected that they will be torn down shortly. Even then, some minimum maintenance should be contemplated.

"Good Condition"?

We believe, in our company, that a building is in good condition when it is structurally safe, reasonably attractive in appearance, and the maintenance on it is solely of a preventive nature. When a building requires more than preventive maintenance, it cannot be said to be in good condition. In that case, if the structure is of a permanent nature, it should be brought up to standard.

The old saying, "A stitch in time saves nine," applies to our building maintenance program. It is only by semi-annual inspections that we can know the necessity for repairs while they are still minor. Reports should be all-inclusive, covering both the inside and the outside of the buildings; estimates should be prepared so that a preventive maintenance program can be scheduled. A comparison of the costs each year will show how well the job is being done and indicate whether any drastic changes should be considered. We have found that, where the costs are high, photographs of parts of building that are deteriorating slowly help to show the rate of deterioration and make a valuable argument for approval of a major expenditure.

Ordinarily air conditioning and ventilation, though they are maintenance, are functions of the power department supervision and subject to monthly inspections. Janitor service is a production charge. However, let us comment on the most troublesome building maintenance problems.

Piles and Foundations—Fortunately only a small percentage of buildings require piles. Failure can occur from decay, insect attack, marine borer attack, mechanical wear, fire or corrosion, and it is imperative we know of any condition requiring attention as early as possible.

Roofs—The question of what kind of a roof gives the longest life and minimum trouble is frequently asked, and it would be wonderful if there were a good answer to it. No one type of roof is better than another, but some roofs are more desirable than others under certain conditions. There can be good tar roofs and bad tar roofs, good asphalt built-up roofs and bad asphalt built-up roofs. The same thing is true of slate, tile, or any other material.

A good roof can be laid by a first-class roofer using good material on a sound and proper base, and, if it is maintained properly after it is installed, it should give a long life with minimum trouble. The secret here, as in all maintenance matters, is in actually doing something after inspections are made. Winter weather, heavy rains, and especially sun are the worst enemies of roofs.

Floors—There is little question that in most cases floor troubles can be overcome by regular inspections and preventive maintenance. It is important to have the right kind of floor to withstand the conditions present; and, if the floors are wet, ample slope for proper drainage. Here again no one material is a cure-all, under all conditions. There are areas where concrete is the best type of floor and others where acid-proof tile, or wood or wood block would be the best, still others where

a mastic might be more satisfactory.

It is important, therefore, that someone who knows and understands flooring be consulted on the inspection of floor areas and any program of preventive floor maintenance, to make certain that floors will receive proper preservative treatment and care before they start to wear seriously, and that when maintenance is required or when replacement is necessary, the proper type of floor is selected. We believe it requires eternal vigilance to overcome flooring trouble completely in most plants; and, that in too many cases, management is ready to give up and use some temporary expedient instead of doing the job properly. The best way to have good floors is to do the best possible job of floor maintenance and not look for a cheap way out.

Paint—Painting also represents a large item in the annual building maintenance budget. Maintenance painting is not often given the attention that it deserves; and, as a consequence, much money is lost by the use of improper materials, or by improper application. For each condition of exposure and service condition, there are optimum paint materials and systems which will give longest life.

Where exposure conditions vary considerably within the plant, as in a chemical plant, it is impossible to obtain low-cost paint performances by using one type of paint for all applications. Lowest painting costs can be obtained only when the proper paint materials are used in each service. Four-fold increases in protective life by the use of proper paint systems are common and can easily be obtained in areas of aggressive paint deterioration.

One of the greatest single causes of early paint failure is an application too thin for durability and long life. For many aggressive chemical exposures a minimum paint thickness of .005 inches (5 mils) is required. In exposures of lesser severity this thickness may not be necessary, but for each exposure condition there is a minimum paint thickness which should not be reduced. With the increasingly effective pigmentation of paints, it is very easy for a painter to obtain good color coverage and hiding with paint films that are so thin they afford no protection to the base surface.

It is the experience of our industry that the material and labor costs of applying a 3-coat paint system approximates 32 cents per square foot. This includes only direct costs of labor and material and does not contain any overhead. Of this 32 cents, approximately one-half, or 15 cents per square foot, is expended for cleaning the surface preparatory to painting. However, deterioration of the surface then cannot occur as long as the paint film remains intact and protective. This fact provides the basis for a substantial reduction in all building maintenance painting costs.

Every paint job, immediately after it is completed, should be placed on a regular inspection and repair schedule and spot-failures repaired as they occur. It should never be necessary again to invest money and labor in preparing the surface for further painting. The elimination of repeated surface preparation will cut maintenance painting costs in half. On the basis of chemical industry averages, direct painting costs which average 14.3 cents per square foot per year of protection have been reduced to 6.7 cents per square foot per year, solely through the adoption of regularly scheduled inspection and repair.

Lamp Cleaning—This is a real item in building maintenance. Little attention has been given to it in most cases, but there are many instances where cleaning techniques have been developed that have materially reduced the costs of the operation. In one case, special care was used to select the lampshades for easy removal and cleaning. We consider this a maintenance charge.

The life of building materials varies so much, and the way they are used has such a major effect, that it is best to rely on your own experience. A properly laid brick wall will last much longer than a wall of the same brick that is not erected properly. A properly poured concrete wall made with proper mix and in accordance with standards of the Portland Cement Association will last much longer than another wall mixed out of the same ingredients but poured in a careless and unworkmanlike manner.

The same thing applies to labor. The labor cost in one plant may be entirely different from that in another plant, since the quality of the labor, the speed with which the men work, the morale, and many other factors will vary.

Color—Industry is becoming more and more conscious, because of its increased interest in human relations, of the value of restful or colorful painting schemes. These started in offices, but have now spread to building walls, ceilings, and, of course, to locker and rest rooms. A painting program of this type, when added to the practice of painting pipes various colors to indicate their contents, adds a great deal to eye appeal, and has a tendency to improve housekeeping, which, in turn, eventually has a marked effect on production performance.

Windows—Another item of rather recent development is the replacement of glass windows and partitions by translucent flat plastic sheets made of polyester resins reinforced with fibreglas mats. These can be purchased in various colors. The pale green especially gives excellent light diffusion with visual comfort. The sheets have their greatest advantage in replacing panes in buildings subject to severe vibration, concussion, radiant heat, and other causes of failure. The polyester resins are reported to be unaffected by weather extremes of heat, cold, and moisture and are inert to industrial fumes, acids and alkalies. The original cost is more than for glass, but when glass breakage is considered, the plastic can be cheaper over a long period.

When one thinks of the multitude of conditions and operations, it is extremely difficult to make overall recommendations. We naturally look for the most modern methods and materials and try to profit by our mistakes so that our end-results will show continued improvement. We believe the soundest idea is to

have a maintenance program covering several years, under which building maintenance is carefully budgeted and an appropriation is set up based on regular inspections. The head of the mechanical department should keep a record of all maintenance costs in such a way that he can discover methods of cutting costs without affecting the quality of the work to be done. In short, a planned maintenance program is essential.

It is the responsibility of building maintenance each year to prepare a budget by building numbers, so that management may have an opportunity to review the total cost of rehabilitation versus the possibility of new construction. I mean by that, if we were to consider separately the rehabilitation of a roof, floors, foundations, sprinklers, or service lines, we might not realize that the total cost of these repairs could equal the replacement cost of the building. If management is going to put on a new roof, it has a right to know what else needs to be done to the building so that the total cost can be compared with the cost of replacement.

In one of our buildings, one wall has deteriorated to the point where it looks as though we shall have to tear it down and rebuild it. In addition, marine borers have attacked about 300 piles supporting the building, and repair will mean cutting them off and capping them. Finally, we have to replace the roof, though we can do it gradually—3 bays every 6 months (at about 5 thousand dollars for the 3)—and finish the job in 2 years.

Any one of those things—the wall, the piles, or the roof—would not be too serious. But when you consider the cost of repairing all three, there is a question whether we shouldn't tear down the building and rebuild it, even though the steel work is in very good shape.

This then is this business of building maintenance, different for different industries and yet susceptible to the same problems and variations on the same answers throughout all industry.

From an address delivered at the 4th Plant Maintenance Show.

Picture by courtesy of U. S. Steel Corp.

NEW WILLSON FeatherSpec®

Contour-line BROW REST

adds extra comfort and protection!

This handsome bronze acetate butyrate frame quickly wins worker approval! Its integrally molded brow rest holds lenses well away from the eyes. Extra space permits cool comfort . . . and additional clearance for workers who wear prescription glasses.

The new FW3 FeatherSpec® is exceptionally light in weight. Distortion-free lenses are .040" thick acetate, clear or green, readily removable. Matching half-plastic, half cable temples adjust for snug fit.

These comfortable spectacles will be worn all day long without fatigue or eye strain. They provide ample impact protection for light grinding, woodworking, spot welding, inspection and other jobs which do not demand heavy duty goggles.

Ask your Willson distributor to show you the new FW3 FeatherSpec® with Brow Rest. Or write for bulletin.

ALSO AVAILABLE—
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FW1—.040" thick clear or green lens, wire core plastic skull temples; also **FW61**, same with .060" thick lens.

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(For details, use Key # B-11 on card on page 65)

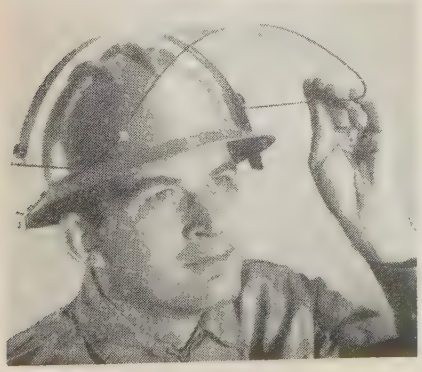
KEEPING UP WITH..

Recent Developments in Protective Clothing

PROTECTIVE CLOTHING SERIES
other articles in December and January

CLIP-ON FACE SHIELDS FOR HARD HATS

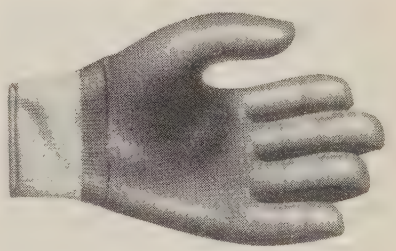
INEXPENSIVE eye and face protection for wearers of Safety Hard Hats and Caps is available with the new Clip-On and Swing-Back type Face Shields, available from E. D. Bullard Co. Large, clear, tough, Lumerith Acetate windows offer effective eye, face and throat protection for the wearers of both plastic and metal safety hats and caps. The Clip-On model is secured by tight gripping, spring steel clips that need only be pushed over the brim. No holes to drill or attachments are needed. It is especially useful for the worker who wishes face protection occasionally and does not want to be burdened with the added weight and nuisance of permanent type shields.



For the worker who needs face protection frequently, Bullard has developed the Swing-Back model (shown here) that attaches to a hard hat by drilling and bolting to brim. The light weight extrudant aluminum hinged bracket swings easily to any desired angle or to the overhead position when not in use.

Both Clip-On and Swing-Back type Face Shields are heat formed to permanently hold their shape of .030 clear or green tinted Lumerith. Swing-Back type standard depth is 10 inches. Clip-On type is 6 inches deep for hat and 6⅝ inches deep for cap. Varying lengths are available. They are sealed in Plyofilm envelopes to protect against scratching when not in use. Both types offer complete protection against heat, liquid splashes, flying metal and wood fragments.

For details, use Key # PC-1 on Inquiry Card on page 65.

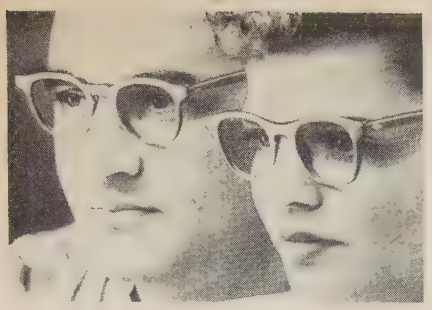


SEAM-FREE COATED GLOVE

FEATURES OF a new plastic-coated glove, made by Edmont Manufacturing Co., include a seam-free work area, extreme flexibility, comfort and an outstanding grip, wet or dry. Called the "Snorkel," the new glove has a knitted jersey liner, made from a two-piece pattern to eliminate seams from the working area. Curved, preflexed fingers and wing thumb provide extra comfort, a good fit, and finger dexterity.

The industrial weight vinyl coating resists abrasion and offers liquid-proof protection from oils, acids, caustics and many solvents. The special finish assures a good grip. The glove is available in three styles for men: a fully coated knitwrist, a palm coated knitwrist, and a 12-inch fully coated gauntlet.

For details, use Key # PC-2 on Inquiry Card on page 65.



NEW LENS & NEW STYLING FOR SAFETY SPECTACLES

MARKETED UNDER the trade name of Styl-Ize, new lightweight industrial safety spectacles combine a shatterproof corrective lens of Optilite in modern shape—plus—distinctive color styling in the frames. Made by United States Safety Service Co., this new spectacle is said to present a new concept in eye-protection-correction to industry. Comfort and styling features are said to eliminate workers objections to wearing eye protection.

The maker states that this is the first shatterproof prescription safety lens in Optilite—the new lens material that is an exclusive formula of compounded resins. Its superior surface hardness greatly increases scratch-resistance, providing greater protection against common hazards such as hot metal splashes, pitting from flying particles of metal, wood, minerals, and other impacts. The lens does not yield sharp fragments when broken, and offers increased light transmission and better resistance to fogging. Workers also find the shape of the lens is unusually becoming. Both frames and lenses meet Federal Specifications.

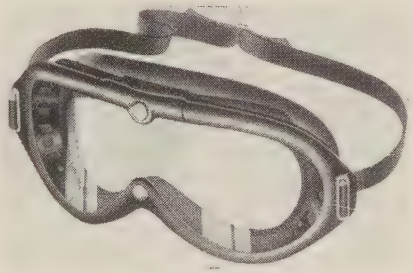
A unique feature of this new safety spectacle is that the modern style frame is available in a choice of colors. Women's are in the fashionable "upsweep" style in a choice of burgundy or blue. The more conservative style for men comes in bronze or slate blue. Lightweight Butyrate frames are non-flammable and non-sparking. The spectacles can be supplied workers in individual corrective prescriptions (single vision, bifocal) and plano.

For details, use Key # PC-3 on Inquiry Card on page 65.

HEAT RESISTANT GLOVES

ALL-LEATHER heat-resistant gloves, said to be able to "take" temperatures up to 800° F., are offered by the distributor, Mine Safety Appliances Co. The gloves, manufactured by Liberty Dressing Co., are said to be pliable, durable, comfortable and economical. They are the development of nearly 10 years of research. Soft, flexible leather impregnated with insulating and refractory materials is used. Inseam construction guards the threads against undue wear. The inner lining, of soft, selected leather, is sewn into finger tips to prevent separation when gloves are removed from perspiring hands. Models include those for temperatures up to 500° F., with reinforced pre-shrunk palm up to 800° F., extra-long (13-inch) models, and outseam reversible mitts of similar construction.

For details, use Key # PC-4 on Inquiry Card on page 65.

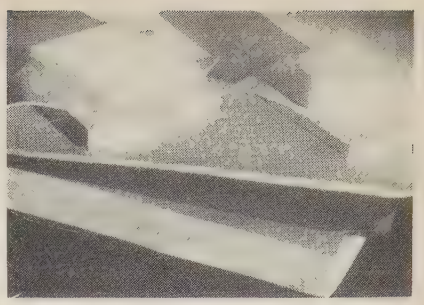


MULTI-PURPOSE GOGGLES

RUBBER-MOUNTED, "Multi Purpose Goggles," designed with a one-piece replaceable heavy 040 lens of impact resistant acetate, has been announced by the Welsh Mfg. Co. A special lens composition and 060 pre-formed lenses are also available. The close fitting goggle has replaceable fabric filters; or wire screen filters on specification. It incorporates wide angle vision with comfort, as the strap terminals are out of line of sight and the flexibility of strap suspension delivers a better fit.

The goggles protect against chemical splashes, spray, dust concentrations and foreign particles.

For details, use Key # PC-5 on Inquiry Card on page 65.



SHOCK ABSORBING MATERIAL

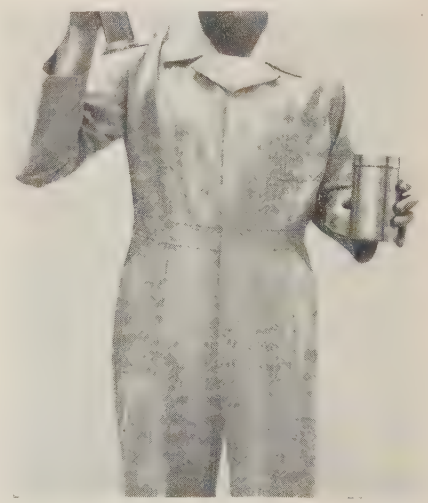
A PLASTIC shock-absorbing material, Vinylaire, has been in development over the last three years by Dura-Flex Co. The material is widely used as padding for athletic body-protection equipment and could be similarly used to protect industrial workers from impact hazards.

Vinylaire is a cellular polyvinyl chloride with millions of tiny, unconnected cells of air. The material will not "bottom" but spreads the force of a blow for maximum shock resistance. Extremely resilient, flexible and light in weight, it is also resistant to heat, cold, moisture, body perspiration or oil. The material is available in sheet stock for either slow or quick recovery and as soft or as hard as specifications may demand.

For details, use Key # PC-6 on Inquiry Card on page 65.

NEW DYNEL WORK CLOTHES

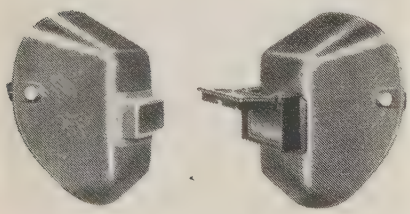
A NEW AND finer Dynel weave, specially perfected to meet the punishing requirements of modern industry, has been developed and



made available in a complete new line of industrial apparel by Worklon, Inc. The company has spent many months in research and testing to achieve this successful Dynel weave which combines the qualities most demanded for rigorous industrial wear. The newly designed weave is exceptionally resistant to acids and caustics; and is said to outlast wool and cotton by as much as 22 to 1 under specific chemical conditions. In addition, work clothes of this mottled grey fabric present a neat, handsome appearance and stay clean longer.

Made from Union Carbide's Dynel, the fabric launders easily and is quick-drying. Other features are its wrinkle resistance and immunity to attacks by mildew, moths and bacteria. The new line of work clothes includes shirts, pants, coveralls, and laboratory coats.

For details, use Key # PC-7 on Inquiry Card on page 65.



NARROW FRONT WELDING HELMETS

These new fiber-glass welding helmets, made in a fixed-front and a lift-front type by Jackson Products, Inc., feature the narrow front shape popular with many welders. The fiber-glass helmets are resistant to heat and moisture, they withstand weld spatter, hold their shape and are said to outlast helmets of vulcanized fiber.

Headgears are of smooth, easy to clean plastic with cork-padded sweatband. Friction pivots may be adjusted by hand while helmet is in use to hold it in any position or make it float down without jolting stops. Available in fixed lens and lift-front lens models.

For details, use Key # PC-8 on Inquiry Card on page 65.

ALUMINIZED ASBESTOS GLOVES

One of the more important developments of recent years has been the bonding of aluminum to asbestos or duck for better protection against radiant heat. The American Optical Co. is offering a line of gloves and mittens that feature aluminized asbestos combined with leather on the working areas for maximum wear and heat resistance.

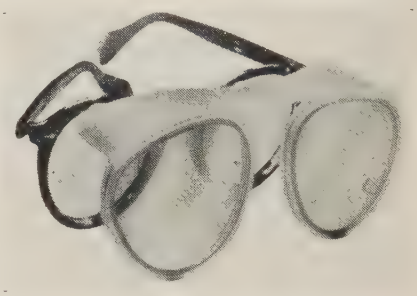
These gloves are suitable for workers in steel mills, furnaces, coke ovens, foundries, glass works; cutting, scarfing, and other high radiant heat exposures. Styles include gauntlet mittens or one-finger mittens with aluminized asbestos backs and chrome tanned leather palms, and gauntlet gloves with aluminized asbestos backs and either horse-split leather or chrome tanned leather palms and fingers. The aluminizing permits the use of a lightweight asbestos that makes the gloves more comfortable and still provides increased protection against heat, sparks and molten metal splash.

For details, use Key # PC-9 on Inquiry Card on page 65.

ADJUSTABLE KNEE PADS

Adjustable rubber knee pad fits any size knee, offering soft sponge-rubber protection for every kneeling job. Available from General Scientific Equipment Co., they are easy to put on and comfortable to wear all day long, kneeling, standing or walking. Will not slip down or come out of adjustment. A safe non-slip waffle tread grips wet or slippery surfaces. They offer comfort and efficiency for any job requiring kneeling on floor or ground.

For details, use Key # PC-10 on Inquiry Card on page 65.



CLIP-ON VISOR GOGGLES

A new type of safety clip-on, called "Tuc-Over," provides shatterproof lenses in an unbreakable frame of tough, resilient polyethylene. Light in weight, "Tuc-Overs" snap on or off prescription frames and are held firmly in place by plastic clips which will not scratch frame or lenses.

This new lightweight eye safety equipment, made by Watchemoket Optical Co., prevents breakage or pitting of prescription lenses and can be used, with shatterproof green lenses, to cut out glare from sun or other light sources. Over-eyes protection is provided by the visor which extends back to the forehead to block out particles, dust, perspiration and glare. "Tuc-Overs" are made in two sizes to fit all prescription glasses frames. Optically perfect shatterproof Methacrylate "Eye-Savers" lenses, .080" thick, prevent eyestrain due to distortion. They fit snugly in the resilient plastic frame and can be changed by the wearer without tools. Lenses are available in light or medium green, and the frame can be had in a choice of translucent white or green.

For details, use Key # PC-11 on Inquiry Card on page 65.

LEATHER PALM GLOVES FEATURE HIGH FLEXIBILITY

TWO LEATHER palm work gloves, "Coronet" and "Coronet Safety," designed for maximum dexterity and comfort, have been added to the line of the Riegel Textile Corporation. In addition to careful tanning which eliminates stiffness and the need for "break-in," the new "Coronet" gloves are made of selected top grain cowhide for still greater flexibility. Freedom of finger movement is further promoted by the construction of the new gloves. "Coronet Safety" is Gunn pattern, has full-leather continuous thumb, leather tips, waterproof safety cuff with pull, knuckle strap, elastic back strap. "Coronet" is the same, but with a water-proof gauntlet cuff.

For details, use Key # PC-12 on Inquiry Card on page 65.

HARD HAT FEATURES IMPROVED SHOCK ABSORPTION

A NEW APPROACH to the science of head protection has been announced by Willson Products, Inc. The new Super-Tough Safety Hats and Caps feature the Geodetic suspension and Pneumatic Headband Cushion which were developed by Cornell Aeronautical Laboratory, Inc. of Buffalo, New York. Research there indicates that the harness or suspension, which until now was looked upon chiefly as a means of holding the hat on the head, can transmit shock from the shell of the hat to the brain. Even when the shell of the hat has not been penetrated, the brain may be injured.

The "Geodetic" or "great circle" crown suspension developed by

(For details, use Key # B-12 on card on page 65)

Cornell Aeronautical Laboratory distributes the force of a blow evenly over a large area of the head, thus minimizing the effects of the blow.

The Pneumatic Headband cushion consists of a series of twelve vinyl plastic air cells, located between the sweat band and the shell of the hat. This headband resists and distributes the impact of lateral blows on the perimeter of the head. When a blow exerts pressure on a given cell, air is forced through small orifices into the adjoining cells, causing them to expand and hug the head. The impact is thus distributed over a large area of the head. The pneumatic feature provides an unusually comfortable cushion-fit on the head. Adjustment for size can be made by regulating the amount of air by means of an easy-to-operate, self-sealing valve.

The shell of the Willson Super-Tough hat is molded of Fiberglas reinforced resins. Both hats and caps are available in five colors: Yellow, red, green, gray and white.

For details, use Key # PC-13 on Inquiry Card on page 65.

VENTILATED WELDING GOGGLE

THE PROBLEM OF obtaining greater ventilation in a welding goggle without permitting penetration of light has been solved in the Penoptic Model 500 welders' goggle made by the Pennsylvania Optical Co. Air passages in the side shields admit an indirect flow of air to the inner cup area but are ingeniously placed to prevent light penetration. Additional ventilation between the lens retaining rings and cupwalls provides direct air flow to the inner lens surface. The new model also features metal reinforcing rings moulded into the inner rim of the cup to retain original cup thread dimensions under all conditions. Corrosion resistant aluminum retaining rings are threaded to allow easy lens replacement without tools. The brown opaque thermoplastic goggle has standard 50mm size welding lenses and cover glass, or with heat treated welding lenses and plastic cover glass.

For details, use Key # PC-14 on Inquiry Card on page 65.

"Safety Maintenance" Salutes A SAFETY IDEA

Plastic Guard Idea Brings Suggestion Award

THE PLASTIC GUARD in the picture above is the brainchild of Mr. F. J. McHenry, who is standing behind it at right. Mr. McHenry, a foreman carpenter in the Depot Facilities Division of the Philadelphia Quartermaster Depot, proposed the use of the plastic guard to protect employees using a rip saw. As the operation of the saw in the picture above shows, the guard eliminates safety hazards from flying chips and the saw blade itself. Operators using the saw now find the danger of injury is tremendously minimized. Here then is another example of individual initiative and management cooperation working together to enlarge the scope of safety.

Picture by courtesy of Philadelphia Quartermaster Depot.

Western Maintenance Show

ANNOUNCEMENT is made of the West's Second Plant Maintenance and Engineering Show, scheduled for July 12–13–14, 1955 at the Pan Pacific Auditorium in Los Angeles.

The announcement, released by Clapp & Poliak, Inc., the show's producers, pointed out the importance of plant maintenance to the West's rapidly growing industry, as evidenced by the enthusiastic acceptance given the show this past year. Concurrent with the show will be the second Western Plant Maintenance and Engineering Conference, which will bring together from all parts of the country able and forward-looking technologists in the field of plant engineering.

"What's the Law?"

Edited by
HENRY M. GROSMAN
Counsellor at Law, Newark, N. J.

Master Superior Court, New Jersey
Member
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
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Newark, N. J.

• • •

Unborn Child Considered a Dependent

AN EMPLOYER APPEALED the award of the Michigan Commission to an injured employee, when the Commission had included as a dependent a child born less than 30 days after the injury to the employee. The Supreme Court of Michigan affirmed the award.

The employer relied upon that portion of the statute which provided that no increase in payments shall be made for increased numbers of dependents who were not dependent at the time of the injury to the employee.

This was a case of first impression and the Court ruled that an unborn child is to be regarded in being for all purposes beneficial to itself. It, therefore, follows that this child even though unborn at the time of the injury to its father, is to be considered a dependent for purposes of determining compensation.

IDE vs. SCOTT DRILLING INC., Michigan Supreme Court; November 29, 1954.

Causal Connection

THE CLAIMANT FELL during the course of his employment striking his head on the floor. He returned to work with no apparent ill effects from his fall.

Several months later the claimant suffered a subarachnoid hemorrhage while assisting a friend in carrying a barrel of cinders out of his home. The claimant was awarded compensation.

The Court, in affirming the award, ruled that there was ample medical testimony to support a finding that the subsequent attack was causally connected with the accident which occurred at work.

The medical testimony was to the effect that a blow such as the claimant suffered would not necessarily immediately result in a hemorrhage but that it would be a leading factor in developing a pressure area that would eventually erupt causing a hemorrhage.

RISLEY vs. GRUMAN AIRCRAFT ENGINEERING CORP., New York Supreme Court, Appellate Division, Third Judicial Dept., No. 258–27; October 20, 1954.

Personal or Business Argument

PETITIONER WAS A bill collector who utilized his own automobile on his job, with the authorization of his employer.

One afternoon after returning from a business call, the petitioner started his car and began to move away from the curb. As he did so, a driver coming up the street behind him blew his horn and stopped to let the collector pull into traffic. Petitioner waved the car on and followed it. The lead car proceeded very slowly and delayed the petitioner. Petitioner blew his horn several times. When they reached the next traffic light, both drivers alighted from their cars and the driver of the lead car came back to the petitioner, saying, "That's my car up there." To which the petitioner replied, "Well, get in your

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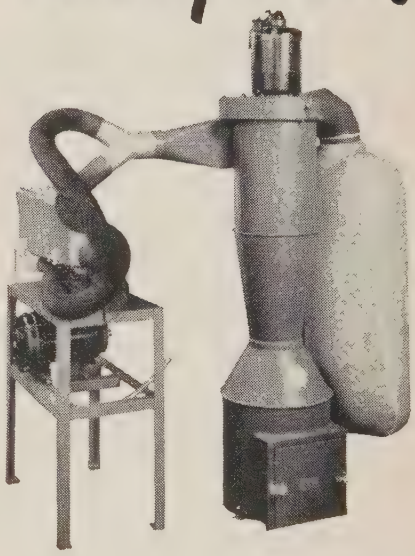

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(Use Key # B-13 on Inquiry Card on page 65)

car and drive it." That ended the conversation.

Four or 5 weeks later while out making his collections, the petitioner had occasion to make a call at a certain company for a collection. While he was looking for the debtor employee, another employee accosted the petitioner. He was unknown to the petitioner, but quickly identified himself as the driver of the lead car in the fracas of 4 or 5 weeks previous.

A conversation ensued; and, as the petitioner turned and started to walk away, he was followed by the employee and struck from behind, causing the injuries for which compensation was sought.

The Deputy Commissioner declared that the petitioner's conduct in blowing his horn made him an aggressor and that the subsequent assault was chargeable to that original provocation; and, in any event, the passage of 4 or 5 weeks broke the chain of causation and transmuted the conflict into a personal feud which was therefore not compensable.

The County Court concluded that the original dispute was unrelated to petitioner's employment and that the lapse of time made the subsequent assault a personal one. The Superior Court, Appellate Division, reversed the judgment of the County Court and remanded the cause for retrial.

In its opinion the Court held "that as to the original incident the petitioner was using his car in the employer's interest and if the delay caused by the other driver's driving conduct—prompted him to blow his horn, that act did not fashion him into an aggressor and take him out of the course of his employment."

As to the more formidable issue, as to whether the passage of time, 4 or 5 weeks, transforms the attack into a personal feud the Court said: "The basic problem remains, whether the employment-originated controversy was the cause or a contributory producing cause of the ultimate assault? It is neither reasonable nor consonant with the spirit of the Workmen's Compensation Act to declare unqualifiedly that the mere passage of time—wipes out the occupational origin and connection and transforms the attack into a personal feud.

"Although the time element is a definite factor for consideration, it is secondary to the controlling factor, the relation between the attack and the employment.

"In the present case, the petitioner and his attacker were not acquainted and had no contact with each other in the interval between the highway dispute and the assault. Consequently, this controversy was the only cause for trouble between them. Moreover . . . the only conversation between them at the time of the assault concerned that controversy and demonstrated that it, and it alone, fostered the attack. Therefore, it cannot be said that the cessation of hostilities at the first encounter broke the chain of causation so as to take the petitioner's claim out of the protection of the Compensation Act."

AUGELLI vs. ROLAND CREDIT CLOTHING STORE, Superior Court of New Jersey; November 18th, 1954.

Teacher as a Proctor—Held Compensable

The claimant, a teacher, was injured in a fall down stairs while she was acting as a proctor during an examination. Professional employees engaged in teaching capacities were excluded from the policy's coverage.

The Court, in affirming the award, ruled that a teacher acting as a proctor during an examination was properly held to be a clerk. Clerical employees were covered by the policy and often proctored examinations. The salaries of proctors were listed on payrolls which were audited by the insurance carrier and from which it determined its premium.

In any event, a teacher employed as a proctor would not be engaged in a teaching capacity so as to be without the policy's coverage.

YOUNG vs. BROOKLYN LAW SCHOOL, New York Supreme Court, Appellate Division, Third Judicial Dept., No. 256–25; October 20, 1954.

Nervous Breakdown Case Reversed

In the October 1954 issue, in this section of Safety Maintenance, there appeared the details of a nervous breakdown experienced by a truck driver who was charged with fatally striking a woman. After grilling by police and submitting to a lie detector test following which the truck operator was told he was lying, he became so unnerved that he suffered a stroke.

The compensation court ruled that the driver had sustained a compensable injury and according to the report published in October the higher court affirmed the award.

It has just been learned that in an appeal to the Supreme Court of Ohio, the majority opinion ruled that the connection of anxiety, worry and the resulting stroke was remote from the duties of employment and therefore the judgment of the Court of Appeals was reversed with instructions to enter final judgment for the defendant.

TOTH vs. THE STANDARD OIL COMPANY.

Welding Show

The american Welding Society will produce its third annual Welding Show at the Municipal Auditorium, Kansas City, Mo., June 8 to 10, inclusive, it was announced by Joseph G. Magrath, national secretary. Concurrently with the show, from June 7 to 10, the society will conduct its annual Spring Technical Meeting in the same city.

The decision to take the show to Kansas City is in line with the society's program to extend the knowledge of the science to all American industry. New developments in welding have been so numerous in recent years that many production and maintenance executives have found it difficult to keep pace with them.

N. Y. Accidents Down

NEW YORK STATE factory workers suffered about six percent fewer accidents while on the job in 1953 than in 1952, the State Labor Department has announced. The number of disabling injuries for every million manhours worked was 14.7 in 1953 and 15.7 in 1952.

In both years the average injured worker lost about 80 days, and 1.2 days were lost per thousand manhours worked. The 1953 data came from 29,500 establishments, employing 1,600,000 wage-earners—four-fifths of all manufacturing employees in the State.

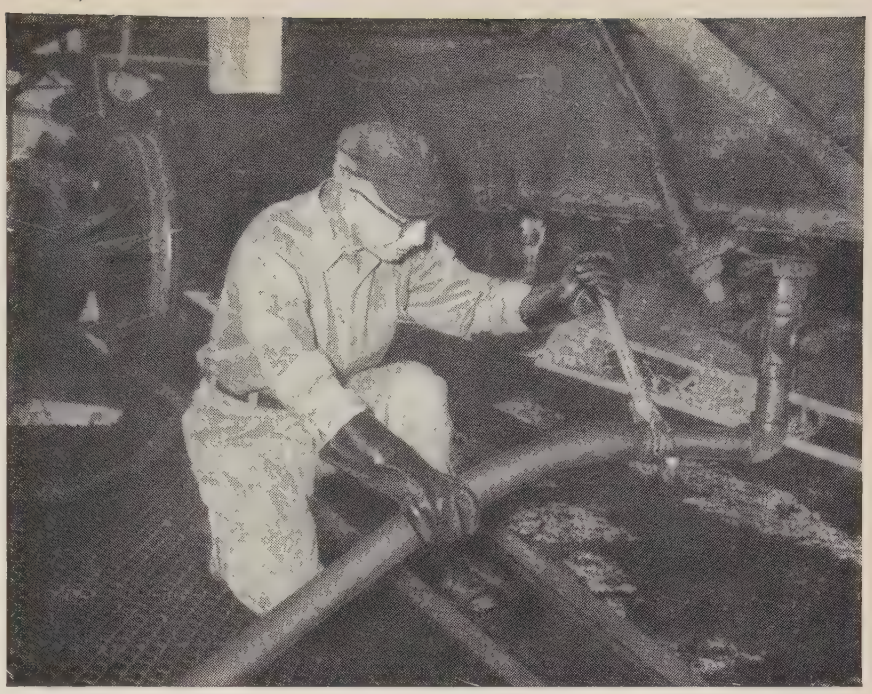
Highest Frequency

In 1953 the highest injury frequency rate was found in the wood products industry group, which includes logging and sawmill operations; its average rate was 44.3 disabling injuries per million manhours worked. There were average rates between 25.0 and 20.0 in the manufacture of fabricated metals, food, furniture, and paper. Rates between 20.0 and the general manufacturing average of 14.7 were found in primary metal manufacturing; in the making of stone, clay and glass products, non-electrical machinery, ordnance, and in miscellaneous manufacture. All other groups were below the general average.

Injury frequency rates of more than 50.0 injuries per million manhours worked occurred in 1953 in four sub-industries: logging, 88.4; sawmills and planing mills, 55.9; gray-iron foundries, 53.6; and concrete products 52.0.

The study also took in 5,000 establishments outside of manufacturing. Injury frequency rates in the industries reporting ranged in 1953 from 36.9 for waste material handlers to 5.4 for cleaning, pressing, alteration, and garment repair shops.

The complete results of the study will be published by the Division of Research and Statistics of the New York State Department of Labor, 80 Centre Street, New York 13, New York.



Edmont Case No. 562: Unloading tank cars of chemicals and repairing lines, rubber dipped gloves lasted 14 shifts. Edmont Neox (reinforced neoprene) gloves wore 30 shifts and gave better protection.

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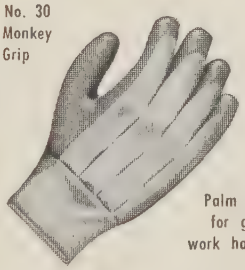

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Palm coated for general work handling

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In all types of industry, modern job-fitted gloves of coated fabric are replacing canvas, leather and unlined rubber gloves on applications involving sharp, abrasive or slippery materials, or the presence of grease, oil, acids, caustics, solvents or thermal extremes.

Specially developed Edmont coatings of Neox (reinforced neoprene), natural rubber and vinyl plastics, make it possible to fit the glove to specific job conditions to provide maximum protection and employee comfort.

In addition, cost savings to companies or their employees average 40% to 70% through longer wear.

Edmont Case No. 526: Feeding sharp-edged steel into press, leather palm gloves averaged 2 shifts. They were replaced with Edmont plastic palm coated gloves, which lasted 8 shifts.

Edmont Case No. 517: Handling wood laminates and formed plastics, canvas gloves with rubber gloves worn as a liner lasted 3 to 5 shifts. Edmont recommended coated fabric gloves wore 30 to 40 shifts, were more comfortable and gave better protection against sharp edges.

FREE JOB TEST OFFER: Send us a description of your operation, materials handled and temperature condition. From our more than 50 types of gloves — palm coated or fully coated — we will recommend type of glove and coating that best *fits your job,* and supply free samples for testing. Our laboratory also develops special gloves for special conditions.

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Edmont

World's largest maker of industrial coated gloves, available through leading industrial suppliers

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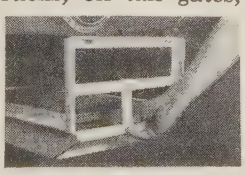

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(Use Key # B-15 on Inquiry Card on page 65)

SAFETY ACHIEVEMENTS

THE MINNEAPOLIS-Honeywell Regulator Co. was recently honored for its record of more than 12 years of test, research and transportation flying without a major accident or personnel injury. Since 1947 Honeywell pilots have flown a total of 1,315,215 accident-free air miles in two company-owned DC-3's used for transportation. In addition, the pilots and test engineers for the company's aeronautical division have flown a total of 1,395,675 air miles without a fatality in planes ranging from the old-time P-38 fighters to such late model jet fighters as the Canadian CF-100.

Presentation of a Meritorious Safety Award was made by the National Business Aircraft Association.

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AIR MATERIEL Command has instituted a program of achievement awards in ground safety to bases, depots, directorates or smaller units satisfying the eligibility requirements. Since the program began last May, 34 awards have been granted.

In 1954, Air Materiel Command won the National Safety Council's Award of Honor for outstanding ground safety performance for the second straight year. AMC was one of four major commands in the Air Force picked for the honor award the other three being the Strategic Air Command, Far East Air Force, and Alaskan Air Command. The Award of Honor was based on the reduction of AMC's ground accident rate by 25.14 percent in 1953, as compared with its 1951–52 figures. A year ago, the reduction was 27.07 percent.

AMC's achievement award program provides for three types of awards, one each for civilian personnel, for military personnel, and for USAF Motor Vehicle Operations.

The minimum requirements for initial awards are one million civilian man-hours of employment without a reportable injury, 25,000 military man-days of service without a reportable injury, and 250,000 USAF motor vehicle miles of operation without a reportable accident.

However, the end of an accident-free period is not the date on which the minimum requirement is met, but rather the day on which a reportable accident is experienced.

Succeeding awards may be issued when the new achievement exceeds the previous achievement by a minimum of 10 percent, with the end of the accident-free period again being the day on which a reportable accident is experienced.

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SAFETY AWARD number five, for "no lost man-hours due to accidents" has been won by The American Box Co. The award, a yearly citation approved by the Industrial Commission of Ohio, Division of Safety and Hygiene, and the Greater Cleveland Safety Council, was presented to George Lukacs, Chairman of the Plant Safety Committee.

Another winner is the firm's subsidiary, American Wood Products Corp., Marion, S. C., with its third

consecutive Safety Award, announced by Plant Manager Robert L. Finan, directing the Safety Program there.

Safety Director Lukacs stated that extra hazards due to increased production were offset by protective guard rails and housings around exposed machinery, and strict adherence to safety procedures.

• • •

A NEW WORLD'S record for safety in the rubber footwear industry has been set by the 5,500 employees of the Mishawaka, Ind., plant of United States Rubber Co.—7,412,636 man-hours without a lost-time accident. The new mark betters the previous record, established in 1946 by the St. Jerome plant of the Dominion Rubber Co., Canadian subsidiary of U. S. Rubber, by one million man-hours.

• • •

MORE THAN two million man-hours with no lost-time accidents was achieved by the Automatic Transportation Company, Chicago, makers of electric industrial trucks and materials handling equipment. General Manager John A. Baldinger credited the company's safety record to employees' awareness and cooperation, and to the operations of the employee safety committee.

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ANNOUNCEMENT has been made that the United States Gypsum plant in Oakmont, Pa. is the winner of the Edward Benton Fritz Memorial Award for Safety. The award is presented each year by the National Safety Council to the plant with the most outstanding record of safety in the pulp and paper industry.

The Oakmont plant was recognized for its record of not having lost a single man-hour of work due to plant accident during 1953. Actually the plant has not had any lost-time accidents for five years.

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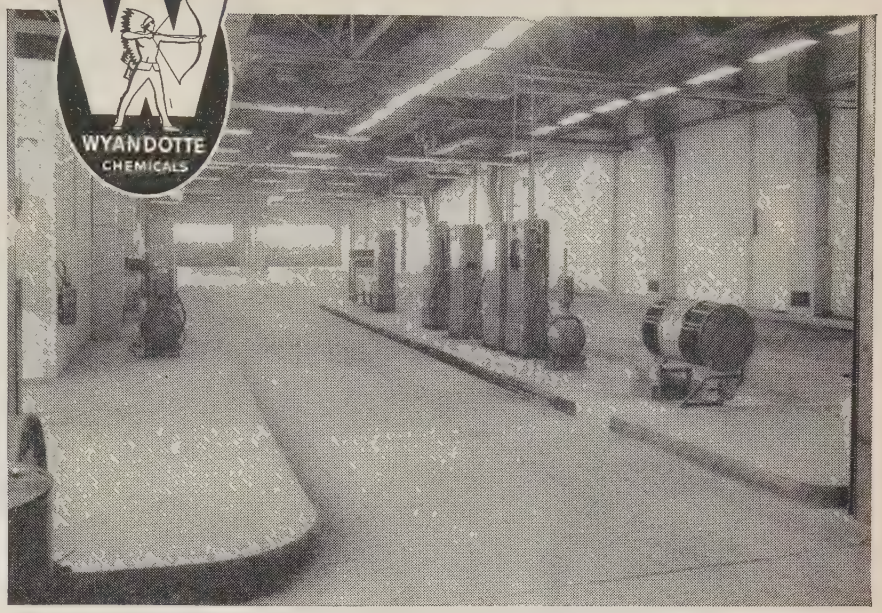

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ZORBALL keeps N.Y.C.T.A. garage floors clean and safe!

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(For details, use Key # B-16 on card on page 65)

B R E C K

HAND CLEANER

Breck Hand Cleaner is an efficient, heavy-duty cleaner which is non-irritating and contains no abrasive materials. Breck Hand Cleaner cleans without lathering, and because of its mild yet thorough cleaning action aids in the prevention of skin irritation. About a teaspoonful of Breck Hand Cleaner is applied, without water, to the hands and arms and rubbed in well, followed by thorough rinsing. The excellent penetrating action of Breck Hand Cleaner loosens dirt, grime, and other soils and permits their easy removal in the rinse. Breck Hand Cleaner is formulated to rinse equally well in both hard and soft water. Breck Hand Cleaner has been found especially useful in helping to remove oil, grease, dirt, dust, grime, paint and other soils from the skin.

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(For details, use Key # B-17 on card on page 65)

Industrial Hygiene

Effects of Electricity on Hearts

THE EFFECTS OF electric shock on the heart and a description of how electric current can be used to restore heart action after such shock were described at the Winter General Meeting of the American Institute of Electrical Engineers.

Approximately 100 electric utility employees die each year as the result of accidental contact with electric circuits, it was pointed out. For years the only accepted first aid for such victims was artificial respiration, although it has been known for more than half a century that alternating current can arrest fibrillation of an animal's heart. Fibrillation was described as a twitching movement of the heart caused by electric current. In this state the heart does not pump blood through the body.

Because of the importance of the problem in the electric utility field, Edison Electric Institute provided funds for a study of the possibility of a method of defibrillation of the human heart without opening the chest. The study was undertaken by Johns Hopkins University, with its Schools of Engineering and Medicine and its Hospital participating.

In a report on this study, W. B. Kouwenkoven, dean of the school of engineering, and W. R. Milnor of the University staff, reported that experiments on animals disclosed that the best method found for defibrillation was the single application of 60 cycle alternating current lasting approximately one second, with the current flowing through the chest in the direction of head to foot. The capacitor method was found to be unsatisfactory because of its ineffectiveness after the heart has been in fibrillation for more than 30 seconds, and serial defibrillation, that is current applied over a period of time, was found dangerous to the human heart.

The two researchers pointed out that the use of electric current to stop fibrillation due to surgery has been used for several years, but the method requires exposure of the heart.

Substitutes for Hazardous Materials

AN INTERNATIONAL panel of health and safety experts has recommended that the International Labor Organization seek further for substitutes for arsenic, benzene and materials containing silica in certain industrial processes, and for certain poisonous substances used in agriculture.

The proposed study was contained in a report of the ten-man panel of the ILO's Correspondence Committee on Occupational Safety and Health. It also unanimously recommended that the ILO should collect and as far as possible publish all available information on the maximum allowable concentrations of harmful substances in the atmosphere of workrooms, as well as the methods of determining these concentrations and opinions on the value of such methods.

An encyclopedia of Occupational Safety and Health would make an important contribution to the prevention of all occupational risks, the Committee felt. In its unanimous conclusion that such a complete standard work should be prepared, the Committee stressed that it should be a tool not only for industrial physicians and safety engineers but also for persons concerned with educational or administrative duties in this field.

The experts found that a new encyclopedia would be particularly timely and useful in view of the needs of countries undergoing industrial development.

In other conclusions the Committee established a text of guiding principles for the organization of indus-

trial medical services and recommended the publication of such a text. The experts also adopted a new international list of occupational diseases and established a set of 22 explanatory notes which would facilitate the task of those responsible for giving notification of the diseases.

Drive on Air Pollution

Steel companies are more active and successful in their drive against air pollution, according to the American Iron and Steel Institute. Increasingly efficient equipment is being developed and installed by the companies to eliminate operational dust from the atmosphere. Devices have been developed for determining the source of any air pollutant, measuring its severity and tracing it accurately to its source.

The equipment installed by steel plants for air control is complex. Blast furnaces, steelmaking furnaces, coke ovens, and even rolling or forming shops and stockyards all require specialized equipment or engineering to keep the air clear.

Research has resulted in the manufacture of instruments designed to analyze air pollution problems and reduce them to a set of tangible facts on which remedial action can be based. It has been discovered through use of the instruments that there is no relationship between the fine haze, or smoke emission at the top of a stack, and coarse particles of dust which may descend on a community.

One steel plant retains a staff of 17 scientists and technicians, working full time on air control problems. A number of authorities from different fields are retained to assist the group when necessary.

Industrial Recreation

The ninth Annual Industrial Recreation Conference will be held at Purdue University, February 12, 13, and 14, under the sponsorship of the School of Science, Education, and Humanities and the Division of Adult Education. This is the oldest industrial recreation conference in the country and annually attracts industrial personnel from all parts of the United States and Canada. Jackson M. Anderson, Consultant in Recreation and Outdoor Education for the American Association for Health, Physical Education, and Recreation, will again serve as Conference Chairman.

The program will include a how-to-do-it session on the work of recruiting and training volunteer teachers for industrial recreation programs. Other group meetings will examine the advantages and disadvantages of employee parks, rod and gun clubs, camping activities, and similar recreational programs.

Smaller organizations will be interested in the discussion on utilizing school and community facilities for industrial recreation, and the session called "Getting the Most from the Budget."

One of the most valuable sessions will be the "Idea Clinic," where open discussion is encouraged to stimulate fresh, original thinking on the wide-open possibilities of industrial recreation.

Representatives from business and industry, institutions, and public and private agencies throughout the country are invited to attend. Reservations may be made or information obtained by writing to: Industrial Recreation Conference, Division of Adult Education-Conferences, Purdue University, West Lafayette, Indiana.

Radiation Is Controllable

Radiation hazards during the next decade resulting from widespread use of radioactive materials for peaceful purposes in industry will be controllable on any foreseeable scale, according to Dr. Herbert M. Parker, General Electric's Director of Radiological Sciences at the Atomic Energy Commission's Hanford Atomic Energy Plant at Richland, Wash. He said that the amount of radiation to be controlled will be millions or tens of millions of times that produced by the world's supply of radium.

Speaking to the Radiological Society of North America, Dr. Parker pointed out that persons working in power plants or factories using radioactive materials can easily be protected from external radiation. Harm from radioactive materials deposited inside the bodies of human beings also can be prevented, but may mean the imposition of excessively high safety standards until certain unknowns have been solved.

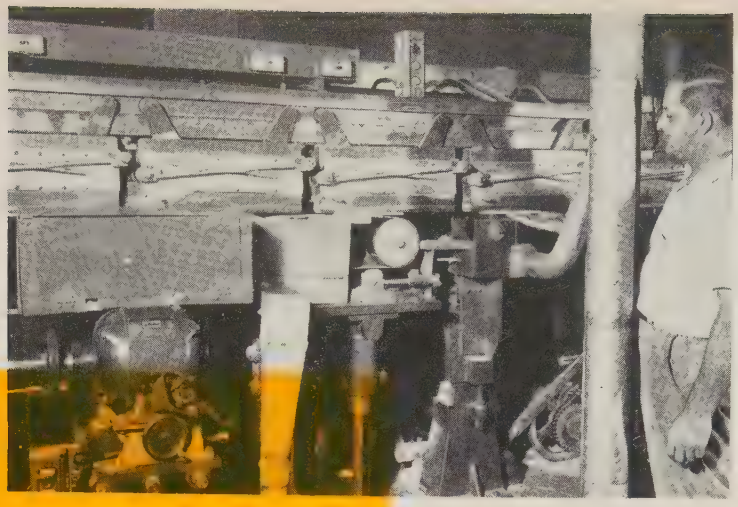
The atomic energy industry started safely "at the expense of considerable investments in radiation protection." General standards of protection and limits of exposure, he said, had to be set on the basis of experience with X-rays and radium. Such standards included wide safety margins to allow for lack of detailed knowledge.

However, Hanford practices provide for even greater safety, Dr. Parker explained. For example, he said, the National Committee on Radiation Protection (of which Dr. Parker is a member) recommends that no individual be exposed to more than 15 roentgens of gamma radiation a year. At Hanford, however, the limit is only three roentgens, with actual average exposure per person running only a fraction of this amount.

Industrial Health

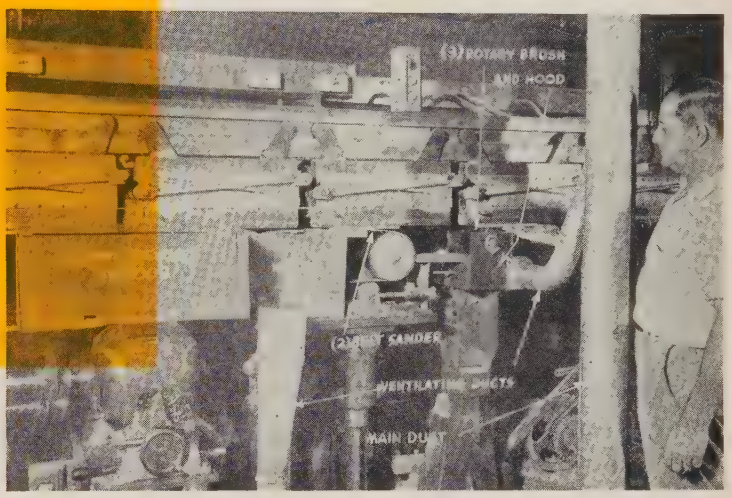
The drive and stamina needed for vigorous industrial leadership requires both a healthy body and a healthy mind," is the opinion of Dr. Rex H. Wilson, medical director for The B. F. Goodrich Company.

(Continued on page 38)



Three dust-producing stations on bookbinding line are controlled by dust collector and ducts.

Dust Collecting Method Whips Another Hazard



A PROBLEM COMMON TO PUBLISHING and binding plants is the tendency for dust hazards to accumulate. Cutting, trimming, sanding, brushing, and a host of other handling and manufacturing operations are paper dust producers.

Much of this dust is characterized by a very small particle size, so that, once it becomes dispersed in the air, it travels considerable distances before settling. This makes its effect felt virtually all over a plant.

Effective methods have been developed for abating these conditions. A common one used in publishing plants applies the principles of local exhaust ventilation. This method employs hoods over the dust producing machinery, with ducts leading from them to a collecting unit. If care is exercised in selecting these components, a system with very high collection efficiency can be obtained.

One Plant Finds a Method

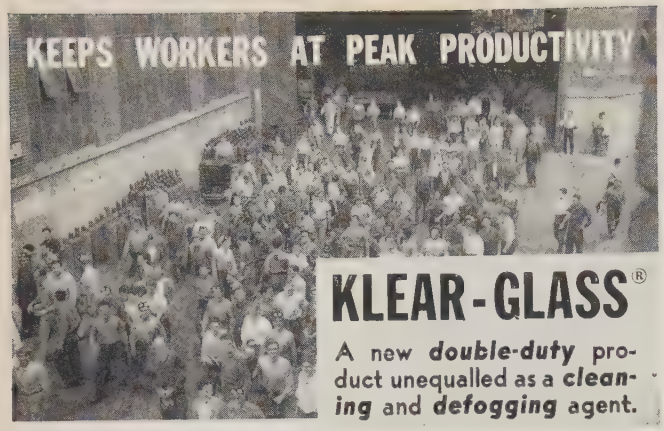
One large book manufacturing company using this method is able to control dust from the 2 bookbinding lines in its plant by means of only 1 dust control system. These lines formerly dispersed enough dust to be a nuisance both inside and outside the plant.

Each binding line has 3 stations which produce dust. The most is created at the first station, where a moving saw blade does heavy trimming on the pages. A considerable amount of dust is also created at the second station on each line, the smoothing station, where a sanding belt takes the rough spots off the edges of the pages. The third station has a rotary brush to remove fine clinging dust.

Further Problems Overcome

The company many years ago adopted local exhaust ventilation, incorporating hoods over the dust producing stations, and ducts leading from them to a collecting unit. The hoods were designed to pass air at high velocity to overcome air currents in the room tending to disperse the dust. The collector was of the centrifugal type. This system proved to be only partially satisfactory because of the collector. While it was capable of doing a satisfactory job in collecting the heavier particles, too much of the dust was sized too small to be within its capacity to separate, and so escaped.

Company officials investigated the problem further and decided upon a collector using tubular cloth filter



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bags to clean the air. This step was taken because cloth filtration removes fine dust particles with better than 99 percent efficiency by weight. A cloth-tube-type collector was put into service, and about twice the amount of dust is trapped in the present system than was formerly collected. The air exhausted from this collector is so clean that the company is recirculating it right back into the plant.

Cloth Bags Fill Bill

Ventilation of all 6 stations of the 2 binding lines requires 1080 cubic feet of air per minute. The cloth is in the form of cotton sateen tubes which are 5 inches in diameter and 70 inches long. Cotton cloth was specified as the filtering medium by the dust control engineers who designed the collector. This decision was made after a thorough survey of the abrasive properties of the dust, the chemical characteristics of it, the normal particle shapes, and a number of other factors affecting the kind of cloth necessary for best performance. The dust trapped in the tubes is periodically shaken down mechanically. It falls into the collector's hopper, from which it can be conveniently removed for disposal. It has ceased to be a troublesome item in the plant's operation.

Pictures by courtesy of American Wheelabrator & Equipment Corp.

Industrial Health

(from page 36)

In a recent speech Dr. Wilson pointed out that the company which looks after the health of its executive personnel is taking out insurance for the future. "Stockholders should insist that their company take as good care of its management as it does of its machines."

Not Only Executives

Although the health of executive personnel is important to a growing, progressive company, the health of its other working men and women is important too, Dr. Wilson feels. Government, industry, organized labor and private medicine all are seeking to find the answer as to how medical care can best be given.

Private Rights Invasion

"The inherent danger in all industrial health programs," Dr. Wilson emphasized, "is the problem of invasion into the private rights of the employee. Industry should by counsel and education try to urge its employees to take care of themselves. It should protect the investment its stockholders have in the key personnel of the company by seeing that these executives are physically able to carry out their assignments, but it should not usurp the place of the family physician in the lives of its employees."

New Stretcher Carrier Frees Bearers' Hands

IF A MAN MEETS WITH an accident on any floor above the ground floor it is frequently difficult to bring him down on a stretcher. This is particularly true in industrial plants where stairways are often steep and wide enough for only one or possibly two people to be on the stairway at the same time.

Under these conditions it is only possible to bring the injured person down with a single stretcher bearer at either end of the litter. Each has both his hands occupied with the stretcher and cannot steady himself on the handrails. The injured person is thus precariously unsafe. In addition, the landings on such stairways are usually comparatively small, and the stretcher bearers may have great difficulty in negotiating the right-angled bends.

Newly-Designed Apparatus

A stretcher carrier has been designed in England to overcome these hazards. This apparatus consists of a pair of shoulder harnesses, comfortably padded and constructed in aluminum alloy. The harness is cross braced and has an eye back and front to receive the pole on which the stretcher is carried. These eyes are fitted at different levels, and are designed so that the stretcher when connected will be carried parallel to the stairway. Since the eyes are fitted on both the back and front of each harness, the stretcher bearer can use them at whichever end of the stretcher he is. A sling type stretcher is strapped to a single pole which has a hook at each end fitting in the eyes on the harnesses.

Advantages of the Carrier

The advantages of this method of stretcher bearing are:

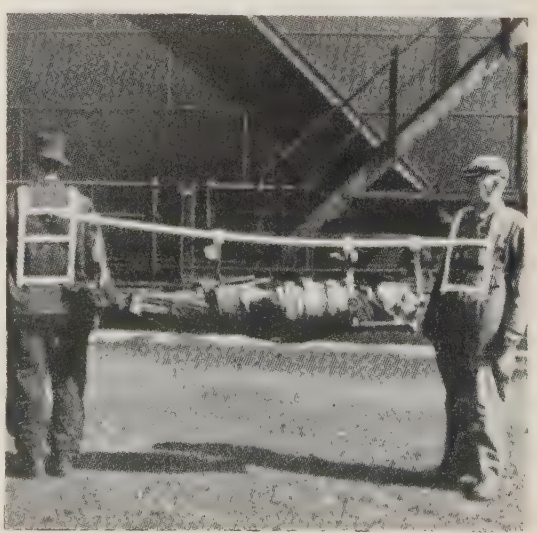
1. The stretcher can be easily carried by two men; and, is therefore usable on the narrowest stairways.
2. The bearers have both hands free, enabling them to carry the stretcher more carefully, and ensure comfort to the patient. Of course, it also provides greater safety for the bearers.
3. The hook and eye attachment of the pole and harness permits either bearer to turn 90 degrees either to the left or right from his normal position. This feature is particularly useful on short and narrow landings.

Pictures by courtesy of the British Journal of Industrial Safety.

Picture shows men carrying injured worker down narrow and difficult outside stairway with new stretcher carrier. Their hands are free to steady themselves and burden.

Stretcher bearers negotiate difficult corner thanks to the carrier harnesses they wear. Note how carrying pole fits eyes in harnesses, and pole supports injured.

On ground, bearers show full 90 degree turn possible with stretcher carrier. Note hands are still free and injured man is still safe and protected on pole apparatus.



The Industrial Nurse

Editor
Rosamond J. Webster
R.N., A.M., Ph.D.

What About Noise?

HIGH COMPENSATION awards for damage to the hearing apparatus have aroused keener interest in the abatement of industrial noise. It is recognized that, from an industrial point of view, only long continued exposure to injurious noise levels will cause irreversible hearing damage. Since reasonably adequate methods of measuring hearing loss have been developed, we can detect hearing injury in its early stages and institute suitable control measures. Such hearing appraisals, it has been found, can be made by trained industrial nurses after some instruction by a specialist in this field.

Three important aspects of noise are: 1. loudness or intensity, 2. frequency or pitch, and 3. quality or timbre. The unit of intensity is the "decibel." A low whisper is about 10 decibels. The ear tolerates noise up to about 90 decibels. Above this level, damage under long continuous exposure is likely, although individual susceptibility varies widely. It has been found that different types of noise have different effects on the hearing mechanism. It is generally believed that noise of high intensity is more injurious to the hearing when it is of high frequency than when the frequency is lower. Other factors are the total length of exposure, the length of exposure per period, whether the sound is continuous or interrupted, the length of the interruptions, age of the worker, and presence of previous trouble in hearing.

Various medical and engineering methods are necessary to control noise and, at the same time, to protect the worker. Such protection can save the worker's hearing and heavy workmen's compensation expenses to the employer. A plant nurse, knowing work processes that produce much noise and listening to the complaints of workers, can bring the matter to the attention of her immediate superiors, plant superintendent, or safety engineer, and with the cooperation of the plant physician plan hearing tests, use of ear protectors, and other measures. Generally, of course, she can only suggest. But her suggestions may be accepted and suitable action may follow.

Discussional on the Nurse in Industry

LAST FALL, a group of 37 persons consisting of active industrial nurses, industrial physicians, management representatives, industrial nurse educators and general nurse educators met in Ann Arbor, Michigan, upon invitation of the American Association of Industrial Nurses to discuss the educational needs of the industrial nurse.

At the opening session, Miss Sara P. Wagner, RN, President of AAIN gave the motivation, and planning which preceded the Discussional on *The Nurse In Industry:*

"Great strides have been made in nursing education in the past decade with even greater developments anticipated for the future. The extent to which industrial nursing will be influenced by these advances remains to be seen. In the past, little emphasis has been given to any specific preparation of the nurse as a specialist in INDUSTRY.

"In April, 1953, Mrs. Evelyn Johnson, the Chairman of the Educational Committee of the Michigan State Association of Industrial Nurses came to the Board of Directors of the AAIN with a proposal to inaugurate a study to evaluate the educational programs available to nurses in industry. This group's chief concern was not so much that courses were not being offered, but that nurses were not supporting them. They wanted to know why. Why doesn't the nurse in industry feel the need for special preparation to do her job?

Courses Discontinued

"In the last ten years or more special courses in industrial nursing have been offered by several colleges and universities throughout the United States and several universities have established programs for industrial nursing conferring baccalaureate degree and/or master's degree. Today a number of these courses have been discontinued because of lack of students.

"It is for this reason that the American Association

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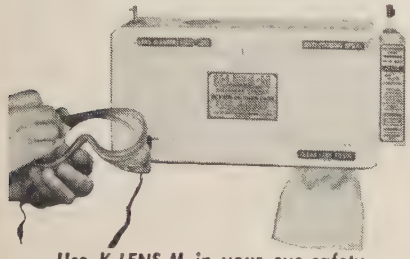

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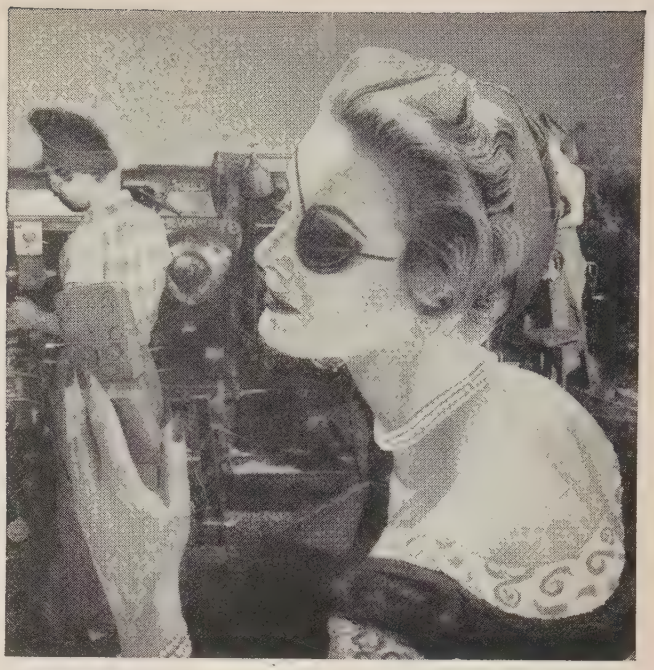

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(For details, use Key # B-20 on card on page 65)

of Industrial Nurses called upon the Institute of Industrial Health, and particularly Dr. Todd Mallery, of the University of Michigan for help in conducting this Discussional. The purposes of the Discussional are:

1. To explore and define the problem areas involved, a. In preparing the nurse for her contribution to health conservation; b. In developing her knowledge, skills and judgments; c. In establishing desirable professional relationships for her service to industry.
2. To recommend possible approaches whereby these problems may be solved.

"Because there are many types of health services in industry varying both as to program and size of nursing staffs, it was decided at the very first meeting of the Planning Committee, if an inroad was to be made in the study of these problems, that we must devote our attention to the exploration of the basic educational needs of the nurse in the small plant and the nurse working alone in industry, inasmuch as the majority of nurses work alone or in small industries."

All the participants took an active and enthusiastic interest in the Discussional and the three-day meeting was devoted to a lively exchange of knowledge, ideas and experiences. The general nurse educators provided valuable sources of information relative to the possibilities for integrating the basic principles of industrial nursing into the established basic and graduate programs. The Medical and Management representatives expressed their views regarding the kind of experience and the type of service they expect from industrial nurses. The practicing industrial nurses discussed the need for further education and opportunities to fulfill their desires for training to better prepare them to do their job as industrial nurses.

Future Programs

Many of the participants felt that they had had time only to scratch the surface. However, numerous valid and stimulating recommendations were made through which it was hoped assistance could be given in solving the educational needs of the industrial nurse. These recommendations will be presented to the AAIN Board of Directors. The Board will do its utmost to implement the recommendations to a point where educational programs for the nurse in industry will be as wide in scope as possible. The Board of Directors will also lend every effort to continue its participation in promoting these educational programs.

Insulation Failures

(Continued from page 12)

If, in addition to the insulation failure in Figure 1, a second failure occurs at point "B," the current will flow over a shunt path through the metallic conduit and around the stop-start switch. The magnetic switch coil is energized and will remain closed until either one of the grounds are cleared up, or the disconnect switch is opened. No amount of manipulation of the stop-start station switch will have the slightest influence on the abnormal condition since the shunted current condition must first be corrected.

Conditions to Avoid

Use of poor types of flexible conduit in wiring equipment subject to water, coolant, and conductive dusts is the reason why many insulation failures occur, and false starts with them. The primary reason for failure of such conduits to exclude the troublesome compounds is poorly assembled connectors at each end. These tend to loosen up very soon after installation and thus prove a ready opening for entry of the unwanted liquids and dusts. Still another condition all too frequently overlooked is the failure to close knockouts in switch and splice boxes. Trouble-making materials can easily enter these openings.

Incidentally, too many wire men fail to appreciate the limited weight-supporting capacity of the top of switch cabinets which are weakened noticeably by the many knockout circles. These tops are not designed to support the weight of heavy conduits and enclosed conductors. Failure to erect proper, well-designed conduit supports results in eventual sagging of the switch tops with each sagged top providing a virtual funnel for the entry of moisture.

If weight must be supported by the light metal of the switch tops, then a stout sheet of reinforcing material should be applied over the original metal with its weak knockout rings. Installations can be rendered reasonably tight if a little extra expense is tolerated. Shaky connectors can be brazed on and the rest of the length of flexible conduit taped with waterproof tape. Or, what is still better, use a better grade approved flexible type conduit in the first place.

Consideration and Installation

It's smart planning to consider condensate problems when installing conduit. Failure to do this often results in water-saturated circuits that have an unhappy faculty for failing at the most inopportune moment. It is also essential that the National Electrical Code be rigidly adhered to since it prescribes but the minimum requirements. Thus any attempt to "chisel" on the requirements can only result in troubles later.

It's a distinct fallacy to assume that extra long conduit runs will save money otherwise expended for pull boxes or condulets. Almost without exception, the extra power required to haul the conductors through the increasing frictional resistance only results in stretching the conductor and thinning the insulation to a point where early breakdowns may be expected. Conductors installed under such heroic conditions are under terrific stress where turns are made around elbows, offsets over obstructions, etc. The mechanical and electrical stresses at these points are further increased as temperature changes or heavy electrical loads heat the conductors.

Care vs. Breakdowns

Still another wireman's error is the failure to comply with the Code's requirement on the number of conductors permitted per given size of conduit. Failure to provide the desired air space, by cramming the conduit with wire, can readily bake the insulation to a point where early insulation failure occurs, and it is completely impossible to remove a single conductor for replacement when "Megger" tests indicate the prospect of impending trouble. All the conductors must come out

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as a unit, providing they have not become baked to the conduit walls so that the conduit has to be dismantled.

There are also insulation breakdowns directly traceable to the grossly negligent manner with which the conductors are laid out and measured prior to the pulling-in operation. The careful wireman will sweep the floor perfectly clean lest metal chips, stones or other abrasive materials gouge or cut the insulation. It may not take long for an imbedded metal chip to work through to the bare conductor if that particular spot is under severe tension when it flexes around an elbow. Although it may appear too trivial to mention, failure to employ plenty of soap stone has been found as the cause for many early breakdowns. In some sort of desperate frenzy, one contractor met his completion date by smearing the final runs of three No. 6's with cup grease to pull them in more quickly. One can imagine how long the rubber lasted in a hot engine room.

Still another little, but important, function which many electricians fail to appreciate fully (unless it's when the inspector is near) is the need for maintaining the proper cable pattern as the conductors are hauled in. Since most electrical power work involves three conductors for AC power, the relative positions of the three conductors should not change for the duration of the pull-in.

If, for instance, we have wire for phase A at the top, left position of a triangle, and phase B at the top, right position, plus phase C at the base of the triangle, that position must be maintained all through the drawing-in operation. To permit the wires to transpose positions is tantamount to making a cable of them which resembles a conventional wire rope. They become thoroughly locked together under tension; their close association causes them to heat severely; and like those in the crammed conduit, no one single conductor can be replaced at will.

Pictures by courtesy of Tennessee Valley Authority.

(to be continued)

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Basic Materials and Design Engineering Show

THE THIRD Basic Materials Exposition will be held at Convention Hall, Philadelphia, May 31 to June 3, according to Clapp & Poliak, Inc., the New York exposition management firm which produces the event. Simultaneously, it was disclosed that the scope of the exposition will be broadened and its name changed to include the subtitle, "The Design Engineering Show."

"Design engineering is one of the important functions of industrial activity which lacks an exposition of its own," said Saul Poliak, president.

In the past, exhibits have been restricted to materials which go into the making of end products for consumer or industrial use. With the broadened scope of the 1955 show, however, certain manufactured products which are themselves included in the manufacture of end products will be shown.

Concurrently with the exposition, a three-day conference is held. Advance registration cards for both events may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

Learning . . . . . the hard way

JUST A SIMPLE IDEA . . .

SAFETY IS ALL too often a complicated thing which requires experts, much careful attention and properly selected equipment. Once in a while though, a simple and regular accident will generate a simple idea for guarding against it. This is the idea which proves the basic appeal of the safety movement . . . trying to help others to be safe and being alert for dangers we ourselves must run.

A hand trucker was pushing his two-wheeled truck through a doorway. One wheel struck an obstruction and brought the truck handle into violent contact with the steel edge of the doorway. How many times has this sort of accident happened? In this instance, the man sustained several fractured fingers. How easily this accident could be avoided by placing simple guards over the handholds of wheelbarrows and hand trucks. They can be fabricated in the shop or, now at least, purchased. A simple answer to a simple but nasty accident.

NOT EVERYTHING BURNS . . .

THERE IS A TENDENCY since the advent of the incinerator to throw any trash that we want to get rid of into a fire. This is a dangerous matter, so much so that many apartment houses have warning signs next to their incinerators telling what things must not be tossed into it.

Industry has these problems too, as this accident testifies. Mechanics were burning trash in a large, open-top drum. Crank-case oil, rags and other trash, including a 200-watt globe had been placed in the drum and the fire started. As an employee was putting oily rags in the drum, the globe exploded showering oil, glass and trash over the employee. Luckily, he had a chance to protect himself with rags he held in his hand and he suffered no serious injury. But it could have been otherwise.

This accident also points to another interesting facet of safety—investigating minor accidents which cause either a slight injury or none at all. It is this type of accident which needs investigation. If no investigation had been undertaken of this injuryless accident, the trash-burning habit might have been carried on so indiscriminately that one day a serious accident would have resulted. This way the company concerned can take steps to educate employees against the danger, before it injures someone.

BEGIN FROM THE TOP . . .

WHENEVER A BUILDING is coming down, or in fact, whenever scaffolding or any other structure is being dismantled, work should begin from the top and work down. In one recent accident a rigbuilder was working 75 feet up in a derrick that was being dismantled. The derrick collapsed, hurling him to the ground, where he was crushed under the wreckage.

There is really no excuse for this type of accident. Responsibility lies with the construction management. No worker should ever be allowed to work above on a structure which has been weakened for ultimate destruction. No one would let a man use a ladder he knew was cracked . . . the same applies here.

FOR A PURPOSE!

LIKE EVERYTHING ELSE there are boards and boards. Each kind is designed for a specific purpose. You don't use an ordinary plank for a makeshift platform, unless you want your neck broken. Apparently, the man in this accident didn't seem to mind. In order to apply a board to the ceiling this lather threw an ordinary board across sawhorses and climbed on it. The plank broke while he was 5 feet above the ground. He fell and fractured his skull on the concrete floor. One hopes that at least he was properly instructed, but it was too bad there was no wise supervisor around to prevent him from injuring himself.

OPPOSING VIEWS . . .

A 1900 POUND tensioning roller on a calendar machine killed a man instantly when it broke loose recently. During the investigation of the accident some interesting facts came to light. The support of the roller had been changed by burning new holes for brackets with an acetylene torch in the steel support. The idea was to lessen the tension on the roller. The plant engineer did not think this would weaken the support, and did not consult with the machine's manufacturer when the change was made. Nevertheless, it was agreed that the support had broken at the points where the holes had been made.

A workman employed on the same shift as the victim said his shift had remarked on the vibration that occurred after the holes were made, but nobody to his knowledge brought the matter to the attention of management or the safety committee. Apparently the men who ran the machine had not agreed with the engineer's estimate, but they had kept still. They were as much at fault as management, which should have of its own accord checked operation after the change. An unfortunate lapse on one side, and silence on the other combined to snuff out a life.

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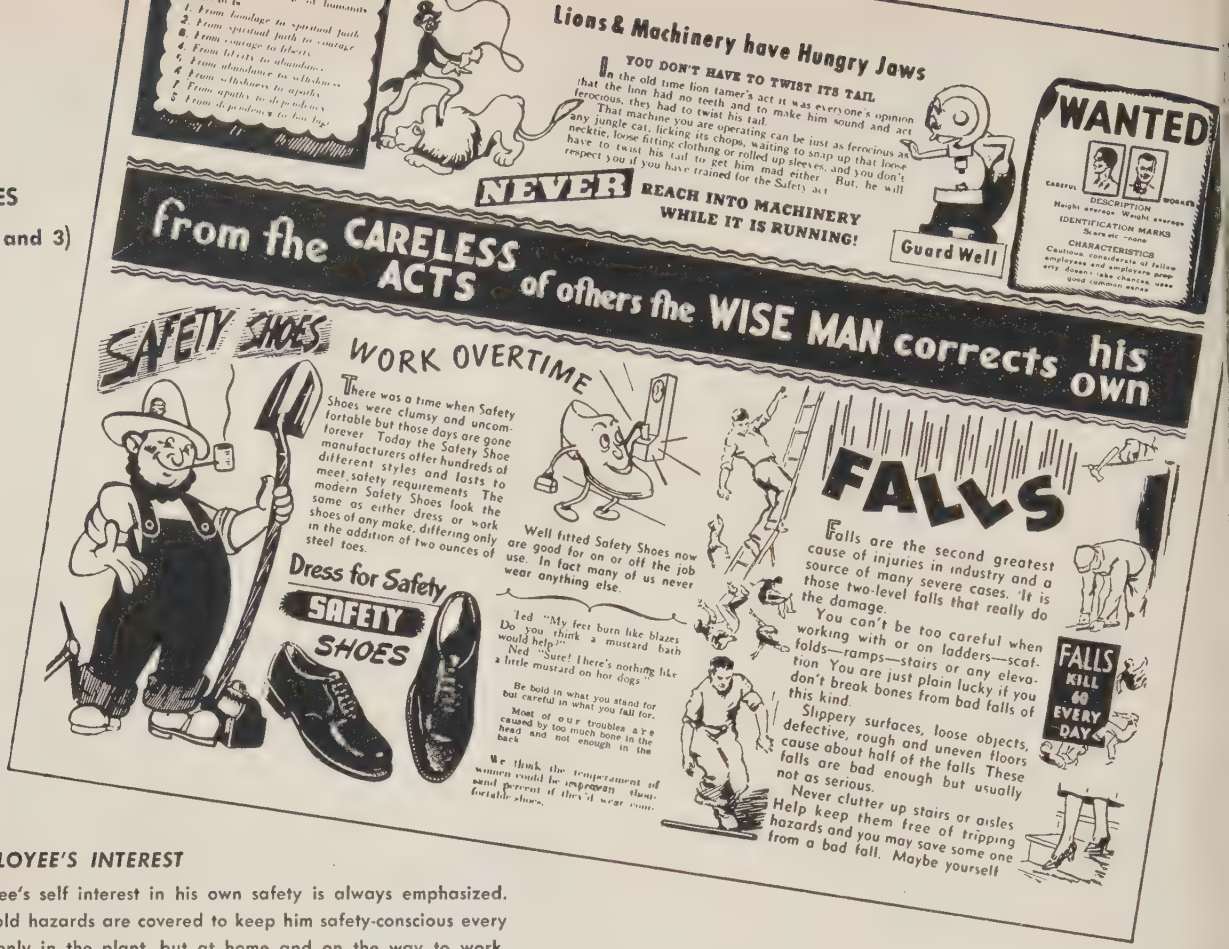
INSIDE PAGES

(pages 2 and 3)


Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
from the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES
WORK OVERTIME
Dress for Safety
SAFETY SHOES
FALLS
FALLS KILL 60 EVERY DAY

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F.O.B. New York, N. Y.

Emergency Lighting

(Continued from page 18)

halls, stairways and other means of egress to the outside. The Pennsylvania State Code, for instance, lists about 115 locations where lighting protection must be provided. All codes provide that a neglected emergency lighting system is in the same category as an inoperative fire extinguisher. There must be no doubt about its ability to function whenever required. Moreover, there are requirements of insurance companies to be considered.

Which Areas Must Be Lit?

Where no regulations govern, emergency lighting locations become an individual responsibility. The basic question is: If your buildings are suddenly plunged into complete darkness, how can employees be evacuated without endangering lives? What areas must be lighted for safety, process control or security reasons?

To quickly and safely evacuate employees requires emergency lighting covering all main aisles, exits, firetowers, locker rooms and lunch rooms. For instance, a paper cup manufacturer in New York state provides emergency lighting for the entire route of its fire drills throughout every department of a large multi-building plant.

Machinery in Dark

Rotating machinery is always hazardous, and becomes dangerously so in darkness. Equipment not powered by electricity may have to be shut down, or even more perilously, must continue to operate. In both cases, adjustments may have to be made in total darkness. In many industries there are processes in progress which would have to be controlled manually in the darkness, or run the risk of fire or explosion. Emergency lighting is needed at all such places immediately and urgently.

What about plant dispensaries? Many local codes require some form of emergency lighting protection. Justification here is obvious . . . emergency treatments.

Emergency Lighting

Will darkness interrupt the essential communications of your plant? In an emergency, communication is vital. Telephone switchboards should have emergency lighting in order to continue effective operations during the "blackout" period.

Do you have a security problem? Will there be open safes, payrolls or the like when lights go out? Is there Federal property involved where security measures must be taken? In every plant or office building where guards are used there is a strong indication that emergency lighting is required in many vulnerable spots. Don't forget, darkness is an excellent cloak for pilferage.

What Must Equipment Do?

Emergency lighting systems must provide: (a) absolute reliability; (b) instant availability; (c) completely automatic operation; and (d) simple, easy maintenance.

Typical Equipment

Typical equipment consists of one or two floodlights, a storage battery and automatic control equipment. The unit is self-contained and easy to install in existing buildings. It can be mounted on a shelf and plugged into any convenient outlet. Every interruption of current to the circuit to which the lighting is connected causes it to operate instantly. A unit should be movable, yet capable of being permanently mounted. Being portable it can be used for emergency repairs. The battery should provide current for several hours of protection. When normal current is restored, built-in chargers should restore and maintain the battery.

Pictures by courtesy of the Electric Storage Battery Co.

Dayton safety ladders

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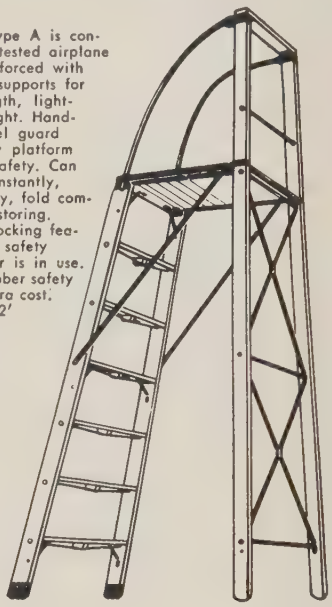
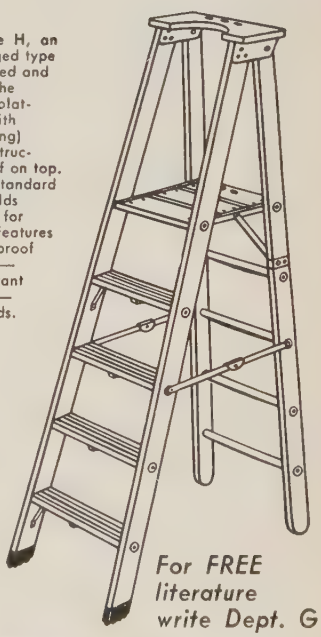


DAYTON Type H, an extremely rugged type ladder, designed and built to meet the demand for a platform ladder with mill wright (rung) type back construction. Tool shelf on top. Ladder shoes standard equipment. Folds absolutely flat for easy storage. Features include pinch-proof type spreaders—corrosion resistant zinc hardware—slip proof treads. Sizes 4′ to 16′ to platform.



For FREE literature write Dept. G

Dayton safety ladder co.

2339 Gilbert Ave., Cincinnati, Ohio
In Canada—SAFETY SUPPLY CO., TORONTO
(For details, use Key # B-23 on card on page 65)

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(For details, use Key # B-24 on card on page 65)

The Fire Front

Metalworking Fire Hazards

THE METALWORKING industry in recent years has suffered an unusual increase in large fires with losses in excess of $250,000 each. The number of such fires occurring from 1942 to 1953 was seventeen times as great as in the preceding ten years.

Part of this increase has been due to higher concentrations of values in buildings, equipment, and products. Although some new factors have entered into the problems of metalworking plant fires, the presence of old fire causes in a more pronounced form has been responsible for much of the increased loss, according to a bulletin of the National Board of Fire Underwriters.

For various economic and defense reasons many new plants are being located in suburban or rural areas where municipal fire departments and water supplies are not adequate to cope with the increased fire potential. Numerous fires are on record where the plants were completely lost as a result of insufficient water supplies for fire fighting, or where the fire department was large enough to handle ordinary mercantile or residential fires but too small to control a fire in the large factory which grew up in the community.

Plants should be located in areas having a reliable water supply, both in volume and pressure, and having adequate public fire protection. To assure constant protection and to minimize the danger from an overtaxed primary water supply, an independent secondary source, or private storage tank should be provided wherever possible.

Unprotected Buildings

Excessively large, unprotected areas are found in a considerable number of the newer metalworking plants. Demand for flexibility of operations and ease of rearrangement of production lines as well as increased use of large industrial equipment such as drying ovens has increased both the height and the area of spaces which can become involved by a single fire. Construction, while frequently noncombustible, is seldom fire resistive; light, unprotected steel commonly found in these one-story plants, is particularly vulnerable to damage from fires of relatively short duration.

Automatic sprinklers were not installed in most of the plants which suffered large fires. In some cases partial coverage was supplied in areas of high hazard, such as storage and shipping rooms, but fires starting in unprotected areas were able to grow unchecked until they were able to overwhelm the sprinkler system. Fires have also gained headway because of delayed detection or failure to call the fire department promptly.

Fire-resistive construction or noncombustible construction protected by automatic sprinklers equipped with water-flow alarm service is preferred for most metalworking establishments. Sprinkler protection should also be provided in fire-resistive buildings housing combustible materials or containing substantial amounts of expensive machinery or valuable stock.

Flammable Materials

Combustible materials found within metalworking plants are varied and often in dangerous quantities. Many of these plants produce other than strictly metal articles. For example, combustible plastic automobile bodies having foam rubber and cotton upholstery covered with plastic fabrics are being assembled in the largest branch of the metalworking industry.

Flammable liquids are a frequent source of fuel for fires within the metalworking industries. Combus-

(Continued on page 54)

November Fire Losses

ESTIMATED fire losses in the United States during November amounted to $61,663,000, according to the National Board of Fire Underwriters. This $61,663,000 loss represents a decrease of 9.4 percent from losses of $68,064,000 reported for November, 1953, and an increase of 6.9 percent over losses of $57,668,000 for October, 1954.

Losses for the first 11 months of 1954 now total $787,103,000, a decrease of 4 percent from the first 11 months of 1953, when they amounted to $819,960,000. These estimated insured losses include an allowance for uninsured and unreported losses.

WE FACE 12 FIRE H

. . . and here's how our paper

By FORREST E. KIMMELL
Safety Director
Sutherland Paper Company
Kalamazoo, Michigan

WHAT I KNOW ABOUT fire prevention and good housekeeping comes from 7 years of experience as safety director for our paper box company. I am not an expert, but I have an idea of the problems we've faced and what we have tried to do about them.

The fire prevention and good housekeeping program at our plant has room for improvement, but we feel we have made some headway, for we have not had a serious fire for several years. The last fire in our converting plants was 5 years ago, on a cellophane machine. The loss was about 5 thousand dollars.

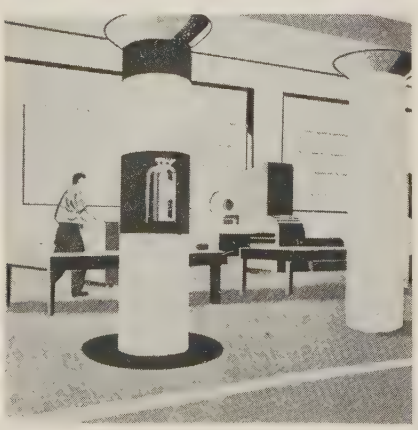
My company is a large one, and some readers may have already made up their minds that the program we have cannot be carried out in their plants because they do not have the money or the people to carry it out. However, I think a good fire prevention and housekeeping program can be had in any plant, no matter how small or how large it may be, at very little cost, if people want it. A good program saves money in many ways. There is no need to tell you what fires cost us, or could cost us, if our plants were to be destroyed by fire tomorrow. Take the G. M. fire. . . .

The first and all-important step to take in setting up a program is to list as many things as you can think of that could cause a fire in your plant.

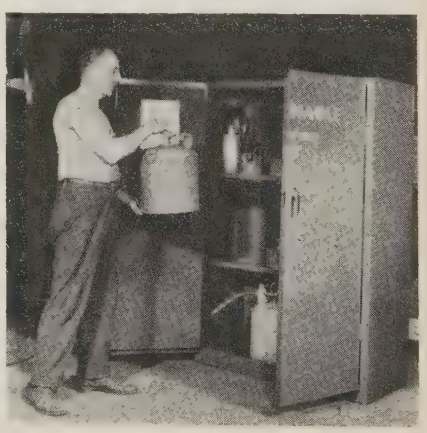
Solvents are dangerous, no matter how safe they are supposed to be, if they are not handled properly. Bulk storage of all solvents should be outside plants in a separate building, a safe distance away from the main buildings, if there is enough land to do so. Otherwise, if this is not possible, storage should be in an area as far away from the heart of production as one can get it, and the area should be enclosed with fire walls and a fire door.

Only enough solvent should be allowed in the area in which it is used as is needed for one shift. This should be stored only in 5 gallon safety cans that are in A-one condition, never in open containers

Welding requires special precautions which should be enforced by work permit tickets.



Fire fighting equipment should be easily seen and identified by red stripe on post.



All flammable liquids should be kept in safety cans and stored in protected areas.

AZARDS

box plant meets them:

1. Solvents.
2. Cleaning rags—after use.
3. Paper dust—offset dust.
4. Smoking.
5. Some inks.
6. Welding.
7. Electrical equipment.
8. Wax.
9. Paper scrap.
10. Dirty material handling equipment.
11. Oil on floor around equipment.
12. Poor housekeeping.

such as ink buckets or pails. Safety cans of the proper design should be provided for waste solvent, and this solvent should be removed from the plant every day and taken to a safe area where it can be dumped on the ground and burned. Solvent of any kind should never be dumped into the drains or close to buildings. There are many good safety cans on the market and a plant purchasing department can get the type needed. Never use any equipment that has not been approved for such use.

Everyone uses the solvent that he thinks is the best for his plant. However, I advise you to check with your supplier, if you do not already know just how dangerous your solvent is, and find out what he recommends to handle the solvent safely in your plant. I have found from experience that these people are more than willing to help.

Never sell solvents short. They are just like an "unloaded" gun; they will always take off when we feel sure they will not.

Cleaning rags should be stored in metal containers after they have been used. The containers should be dumped, after each shift, into a large metal storage cart that has a lid on it. This storage cart should be on a dock outside the plant or as close to the outside of the plant as you can get it. Rags should never be thrown on the floor or into corners. The excess solvent in the rags should be taken out of them and put into the solvent disposal cans before the rags are put in their containers. The amount of solvent used on rags should be controlled very closely. Some of our employees like to have more on the rag than in the cans, for they feel that by doing

(Continued on next page)

Sump cleaning of machines is fire safety must. Here vacuum machine is being used.

Smoking area is set off from working area by red plastic floor markers for safety.

Materials handling equipment is fire hazard if not kept clean and fueled outside plant.

Removing dust from ducts, beams and other out of reach spots is important.

this they will make their jobs easier. This is not true. There are many good containers on the market to be used for the storage of used cleaning rags, and here again your purchasing department can help you select the proper one.

Dust in a carton plant is a headache. Try as we will, we never seem to conquer it. It is just like living on a gravel road. No matter how many times you dust your home, or how tight the doors and windows are, dust is always there. Paper dust or any kind of dust in your plant, if allowed to accumulate in great quantities, is very hazardous. If the conditions are just right, it can cause a great deal of damage. Therefore, it should be removed from the plant.

This can be done in several ways. If your plant is large enough to have a building maintenance department, this department can set up a crew that cleans each department in your plant at regular periods. They can use industrial vacuum cleaners for the areas that are not cleaned each day or week during the regular clean up periods, such as high ledges, overhead pipes, air ducts, walls, ceiling, roof beams, and lights.

In the smaller plants this type of cleaning can be handled by a special crew from the regular employees, and the cleaning can be planned so that it can be done on a Saturday or Sunday when the plant is closed. If this is not possible, an outsider can be contracted to handle the cleaning at regular periods.

Dust in any carton plant can be removed by installing the proper ventilating system. The initial cost, however, is high and therefore we remove the dust by the methods I have just outlined. A good crew on the operating end of an industrial vacuum cleaner, properly supervised, can do a very good job.

Smoking—No Hazard—If . . .

Smoking is no hazard, if we do not make rules too strict. By this I do not mean to give the impression that smoking should be permitted any place in the plant. There was a time when we allowed smoking only in the wash or locker rooms. We always had trouble because someone always wanted to smoke where they should not, and did. When they saw a plant guard or a foreman they would ditch the smoke some place—a perfect invitation to fire!

We now have smoking areas in our plants. These areas are so placed that they are a safe distance from all flammable material. The areas are marked as smoking areas, and are large enough for 6 to 8 employees at a time. We provide benches and ash trays. We now have very little trouble, if any, with employees taking a smoke in an area where they should not. Incidentally, before we installed the smoking areas, we got the approval of the fire insurance inspector. We do not permit smoking at the presses or at any other equipment.

Welding is not permitted any place in our plant until the welder has secured a welding permit from the supervisor in the department where he is going to weld. It is the responsibility of the supervisor and the welder to be sure that the area is properly prepared for welding before any welding is done. After the job is completed the welding permit is sent to the safety department. Plant guards check the area before and after the welding and sign the card. It is a rule that there is always an extra man at the area, besides the welder, to be on the lookout for fire. All welding equipment has a fire extinguisher on it, so there is always one available if needed.

Electrical Prevention

Electrical equipment such as motors, control panels, and the like are inspected regularly by the electrical department. On regular clean-up the motors on the equipment are blown off with air. The excess oil or ink is cleaned off also. By doing this we prevent a build-up of dust that could be set off from a spark.

"Fire-Chief Finished"

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to confine the welding operation to a given area

used to protect machinery, and other equipment from water, dust and snow.

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(For details, use Key # B-25 on card on page 65)

All wiring is put into conduit for protection. We keep so called "temporary wiring" at a minimum. We do not permit anyone but the electricians to repair or install any wiring or electrical equipment.

Wax will not give much trouble if it is not over-heated, and all open flames are kept away from it. We have a master wax tank in a separate room, and pump the wax from there to the different machines. Our wax machines are cleaned every week with steam.

Intra-plant material handling equipment, such as gas or electric mules, and electric transporters, if let go, can accumulate a lot of dust and grease in a very short time. We have a standing order to all operators that their equipment must be blown off with air at least once a week and more often if necessary. We have special high pressure air lines installed for this. We do not permit the filling of a gas tank while the motor is running, nor do we permit the filling to be done inside. It has to be done on the dock.

Oil, Inks, and Extinguishers

Oil around machines is kept to a minimum. All our presses have drip pans under them and all the bases of the presses are set in drip pans.

All inks that are hazardous are handled in the same manner as the solvents.

I have covered the control method we use on each of the 12 fire hazards we face. I would like to say something about what we do to make our employees always conscious of the ever-present danger of fire.

We have fire extinguishers all through our plants. These have been carefully selected for the area in which they are to be used. The area on the wall or post is painted red where the extinguisher hangs, and a red band is painted on the wall or around the post several feet above, so the employees know where the extinguisher is. When they walk through the plant they can see these red bands. At each extinguisher we have a metal card that tells the type it is and on what type of fire it is to be used. There is also an inspection card. We inspect every extinguisher every week. This helps to make the employees conscious of fire prevention. All our sprinkler valves and alarms are tested each week.

We use our bulletin boards to post information about fire prevention. The house organ also publishes much material. In fact, we use every means we have to talk fire prevention. We have learned from sad experience that fires do not pay. We lost one of our employees in a fire, and the life of a fireman in another. We also lost our garage and 20 pieces of motor equipment, so we know that fires are costly and we do not want them. All our buildings have sprinkler systems in them.

If you have a good fire prevention program you cannot help but have a good housekeeping program, for

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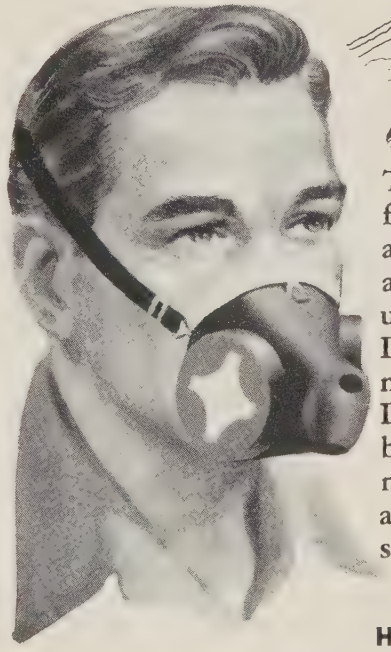
DUST STORM THROAT?

YOU NEED A . . .
DUPOR No. 4



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they go hand in hand. If you will call upon the services of your fire insurance carrier and your local fire departments, they can give you a great deal of help in setting up a program in your plant. You pay for this service, therefore take advantage of it, for no one person can do it alone.

Last, but to me the most important factor in any program, is the people whose job it is to run the plants. If they have been sold on the program and in turn will sell it to their employees, you will always have a good fire prevention and good housekeeping program.

Pictures by courtesy of (left to right) U. S. Navy; Pittsburgh Plate Glass Co.; Protectoseal Co.; Traffic Safety Supply Co.; Towmotor Corp.; Audio-Productions, Inc.; Spencer Turbine.

From an address delivered at the National Safety Congress.

Metalworking Fire Hazards

(from page 49)

tible cutting oils for use in machining operations are common, as are flammable hydraulic fluids for machine control and operation. Spraying of these liquids under pressure from ruptured pipe lines of even small diameter can result in fires of extreme intensity. Nonflammable hydraulic fluids should be used where possible, particularly where sources of ignition are prevalent.

Other Dangers

Flammable liquids are also found in oil quenching tanks for heat treating of metals and in paints and lacquers used as metal finishes. These and other hazardous operations should be segregated from the rest of the plant to the extent indicated by the danger.

Metals themselves may provide fuel for fires or explosions. Magnesium is the most common of the metals which burn in solid form, although titanium is becoming of increasing importance. Scrap steel turnings and chips, particularly if coated with cutting oils, will also burn. Even metals not normally considered combustible, when in the form of a powder, can explode violently. Many lives have been lost as a result of such metal dust explosions.

Other fire and explosion problems are created by the use of molten salt baths and certain electro-plating and electro-polishing methods. Additional new processes and materials, some having a potential fire hazard, are rapidly being adopted by the metalworking industries and adding to their problems.

Fire Safeguards

Metalworking plants in general require well organized programs of inspection, maintenance, housekeeping, and waste disposal to achieve safety. A principal part of the direct burden of providing and maintaining fire safety, as in any industry, falls jointly upon the management and its technical personnel.

A number of codes and standards are available which are directly applicable to fire problems of the metalworking industries. Where new manufacturing methods and special processes are encountered and published safety recommendations do not exist, guidance should be sought from governmental agencies, industrial consultants, manufacturers of fire control equipment, and fire protection engineers of insurance groups.

Additional information on metalworking processes and recommended precautions can be found in the National Board of Fire Underwriters' illustrated booklet "Fire Hazards and Safeguards for Metalworking Industries."

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(For details, use Key # B-27 on card on page 65)

HIGHTOWER APPOINTED

J. P. HIGHTOWER has been appointed general safety director of the Greyhound Corporation, according to an announcement by President Orville S. Caesar. In his new position, in charge of the safety practices of 24,000 employees in all Greyhound operating divisions and subsidiaries, Hightower succeeds the late William F. Grant. He is recognized as an authority on interstate fleet operation safety practices.

transportation safety

Army Eliminates Man-Made Fog

SUCCESSFUL Alaskan tests on experimental ice fog eliminators recently completed by personnel of the Corps of Engineers' Research and Development Laboratories, Fort Belvoir, Va., mark a definite advance in the solution of the ice fog problem at air bases in the interior of Alaska.

The man-made fog results from the discharge of exhaust gases from combustion devices into the atmosphere at temperatures from minus 24 to minus 40 degrees Fahrenheit. The low visibility caused by the fog, which at times completely "socks in" the northern bases, seriously hampers aircraft operations.

Field tests were conducted by ERDL on ice fog eliminators incorporated into two 6-hp engines. Without the eliminators, fog appeared as a plume 60 to 70 feet down wind from the exhaust of the two engines. Only slight traces of fog were visible when eliminators were used.

Developed by the Armour Research Foundation under contract with the Laboratories, the eliminators condense the moisture from the engine exhaust gas by cooling, mix it with cold ambient air, and finally reheat the mixture and discharge it to the atmosphere fog free. Equipment based upon this principle can be applied to engine-powered ground equipment.

TRAILER TARP CRANK

OPERATING LIKE a giant traverse-rod curtain, this new device, called "Speed-Rack" permits one man to crank trailer tarpaulins to closed or open position. The mechanism consists of two troughs (or tracks) installed on each side of the trailer. The tarp is laced to sliding top-rails which are connected to each other by spring steel strips. A simple hand crank at rear of trailer opens or closes the tarp.

Use of the new device reduces damaged cargo claims, and cuts down injuries as well as eliminating handling of heavy ridge poles, speeding loading, and giving longer life to tarps by better handling. No longer do drivers have to climb over cargo to adjust a tarp in windy or wet weather—a hazardous job.

For details, use Key # TS-11 on Inquiry Card on page 65.

Carbon Monoxide Tests

IN AN EFFORT TO determine to what degree carbon monoxide affects motorists and to what extent concentration of the deadly fumes may contribute to traffic accidents, by reason of drowsiness, weakness, or slowed reactions, Vermont State Police conducted a survey of vehicles on Vermont highways.

Early in January 1953, Commissioner of Public Safety William H. Baumann assigned two Vermont state troopers to work in conjunction with State Pathologist, Dr. Joseph W. Spelman in detecting that unsuspected but deadly enemy, carbon monoxide. Working on bitterly cold days when motorists were driving with windows closed and heaters operating at full capacity, the troopers and Dr. Spelman halted moving traffic and tested the vehicle interiors with carbon monoxide indicators.

Commissioner Baumann stated that the results showed out of the 114 vehicles tested, 4 of them were found with concentrations of 0.1%, considered dangerous. 13 of the vehicles checked were found to contain concentrations of between .005% and 0.1%. Vehicles checked included passenger cars, buses, trucks, and tractor trailers. Of the 4 vehicles found with dangerous concentrations one was a 1952 model sedan; one a 1937 model sedan equipped with a manifold heating system and 2 were tractor

trailer trucks. As a result of this survey one of the trucks, found to have had a faulty exhaust system, had the faulty system repaired. The information tabulated in the tests included the make, year and model of car; whether windows and/or ventilators were open or closed and, if open, to what degree; length of time of operation of vehicle; time of day check was made; type of heating system and at what capacity heating system was being operated.

Safety Check Program

TRAILMOBILE has added a second front to their highway safety program with a two-pronged attack aimed at used trailers. The announcement of their new "Safe-T-Chek" used trailer safety program was made at the annual meeting of the company's 54 branch managers and distributors in Cincinnati.

Under the program, the company will:

1. Recondition the brakes, bearings, lights, springs, and props of all used trailers sold by the company, and,

2. Launch an intensive service program to encourage operators to maintain new and used trailers in safe operating condition.

Jack Kruizenga, sales manager of the company's used trailer division, said operators will benefit by getting warranted dependable trailers that will operate more efficiently, with less down-time, and that they will be encouraged to maintain the trailers in a safer, and therefore more profitable condition.

Branch managers will scrap any trailer which is received as a trade-in that is not road-worthy. All others will go through the service department on a standard work order that calls for inspection and replacement of un-safe brakes, bearings, springs, props and lights.

Each trailer will then get a "Safe-T-Chek" seal, and a written warranty to operate as warranted for 50 days. Trailers that do not meet the warranty can be returned to the branch and all work will be done on a 50-50 split cost basis between the operator and the branch.

After the 50-day period, the customer will receive a book of "Safe-T-Cheks," certificates good for substantial savings on service work, that will encourage him to maintain his units by reducing service costs.

Keys for Safe Driving

WHAT ONE driver can do to help make America's streets and highways safer was outlined recently by a 34-year-old truck driver who in 13 years has established a safe driving record of 1,280,480 accident-free miles, the equivalent of 50 times around the world.

Omer K. Potts, Lawton, Okla., truck driver for the P & D Distributing Company, holds the outstanding record. Together with 12 other drivers of the firm whose safe driving records are over 100,000 miles, he was honored for the safety achievement, at an award banquet attended by representatives of law enforcement and safety organizations and the brewing and insurance industries.

Potts, who twice weekly pilots a semi-trailer truck on round trips between Lawton and the Omaha, Nebr., plant of the Falstaff Brewing Corporation, listed the following as his self-imposed rules for safe driving:

1. Be alert. Don't overdrive.
2. Abide by the laws and common sense.
3. Be courteous to the other driver.
4. Know your route and your vehicle.
5. Maintain your vehicle in first class condition.
6. Be prepared to meet any emergency. Don't blame the weatherman.
7. Develop smooth, accurate driving habits.

Potts's record includes a total of 236,880 miles without a chargeable accident in more than two years with P & D Distributing Company and 1,043,600 accident-free miles during the previous 10-year period.

First Army Issues Winter Driving Rules

FIRST ARMY Headquarters has kicked-off a "Drive Safely This Winter" movement to offset the snowy season's increased accident tolls among military personnel. Installation commanders of the eight-state First Army area have been directed to provide for a minimum of two hours of instructions in safe winter driving attitudes and techniques for each operator of an Army motor vehicle.

Installation commanders will reduce vehicular travel to a minimum during hazardous weather and will assign personnel who are experienced in driving during the inclement weather.

First Army has issued the following 11 safety rules to all military personnel operating either an Army vehicle or their privately-owned automobiles:

1. Know that your vehicle is safe mechanically.

2. Keep windshield and all windows clean and clear.

3. Maintain tire chains ready for use. Use them intelligently.

4. Get the feel of the road when starting out.

5. Expect changes in traction with temperature, weather and pavement changes.

6. Keep speed below safe speed limits. Caution saves explanation and regrets.

7. Slow down gradually, well in advance of stopping point or direction changes.

8. Signal your intentions clearly and well in advance of maneuver. Place vehicle in proper lane and check to assure safety of maneuver.

9. Apply brakes with gentle pumping action. Avoid locking wheels.

10. Be alert. Assure fresh air supply.

11. Winter clothing is bulky, reactions may be slowed—Allow extra margin of safety.

inside the trade

E. W. Bullard, Jr., Sales Manager of the E. D. Bullard Company, San Francisco, has announced the appointment of D. R. Metzler as Export Manager. Metzler, a graduate of the School of Mineral Industry, Pennsylvania State University, had worked throughout Latin America as a safety equipment sales engineer, with headquarters in Caracas, Venezuela. He had previously been employed in mining and petroleum geological work. He is a member of the American Society of Safety Engineers.

Carl F. Norberg was elected president of The Electric Storage Battery Company at a recent meeting of the Board of Directors. The action followed the resignation of S. Wyman Rolph.

Norberg joined a subsidiary of the company in 1925, and was transferred to the parent company in 1943. He was elected a director of the parent company in 1948, and in 1950 was named executive vice president.

A. M. "Brig" Young has been named general sales promotion manager of Libbey-Owens-Ford Glass Company, according to E. M. Everhard, vice president. Mr. Young will have supervision of the company's sales training programs, displays, collateral sales aids, and farm market research activity. He will direct the activities of regional sales promotion managers in various parts of the country.

Announcement has been made of the merger of Wagco Products, Inc., manufacturers of safety clothing, and Strohl Sewing Industries, industrial and advertising production sewers. With Kenneth D. Naysmith as general manager, the Dearborn, Michigan, firm will be known as Wagco Products, Inc.

The John B. Moore Corp. has announced the appointment of Stanley H. Henry of Ann Arbor, Michigan as technical service representative for lower Michigan, and Andrew C. Kasnik of Euclid, Ohio to handle sales in the Ohio territory. The Moore company, of Nutley, New Jersey, also plans to establish warehouse stocks of its solvents, cleaners and related equipment at Cleveland for more effective service in the Ohio area.

A new ultra-modern structure housing the basic and applied research laboratories of Pittsburgh Plate Glass Company's paint and brush division has been officially opened at Springdale, Pa.

Containing approximately 68,000 square feet of floor space, the laboratory is completely air conditioned. Headed by Dr. Howard Gerhart, the research laboratory currently has a staff of 85 chemists, engineers and assistants.

E. D. Peck, vice president in charge of the paint and brush division, said that the existing staff at Springdale would be steadily augmented as the firm plans to extend its research program on new chemical compounds, paints, varnishes, enamels and lacquers, resins and plastics. Currently, more than 400 scientists and technicians are associated with the paint and brush division.

Clark Equipment Company, a leading manufacturer of materials handling equipment, has received Underwriters' Laboratories approval and listing of its complete line of solid-tired industrial fork lift trucks powered by liquified petroleum gas (LPG).

The approved line ranges in capacity from 2000 lbs. to 7000 lbs. and includes Clark's Clipper, Carloader and Utilitruc models. Earlier this year the LPG Carloader was the first such fork truck to receive UL approval.

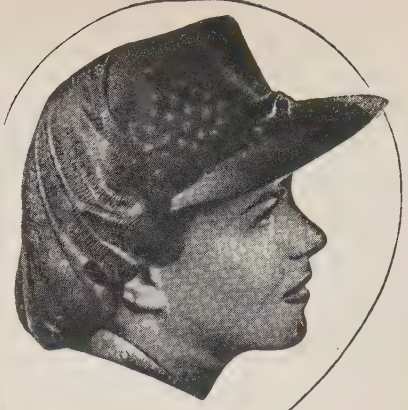
A new branch, the third to be opened recently by The Boyer-Campbell Company, is located at 36561 Plymouth Road (Livonia), Plymouth, Michigan. This one was established to serve Northwest Detroit, Wayne, Northville, Plymouth, Ypsilanti, Ann Arbor, Chelsea, etc., with a complete line of industrial and safety equipment. Manager of this branch is Robert A. Foster, who has been with the company for 14 years.

Beaver Art Metal Corporation, Ellwood City, Pennsylvania, designers and manufacturers of tubular steel scaffolding and materials hoisting towers, has announced a corporate name change which took effect January 1, 1955. At that time the company became identified as BEAVER-ADVANCE Corporation.

James S. Hubbard and Charles J. Martin are newly appointed sales managers of Wyandotte Chemicals Corporation district offices in Boston and Buffalo respectively. Both appointments were effective January 2, as announced by Fred Tholen, sales manager of the J. B. Ford Division of Wyandotte Chemicals Corporation.

Both Mr. Hubbard and Mr. Martin have thorough and practical field experience in the many different industries served by Wyandotte Chemicals' cleaning, washing, germicidal, metal cleaning and absorbent products.

The appointment of Norman E. Carlson as industrial sales manager of the Fireye Division of Electronics Corporation



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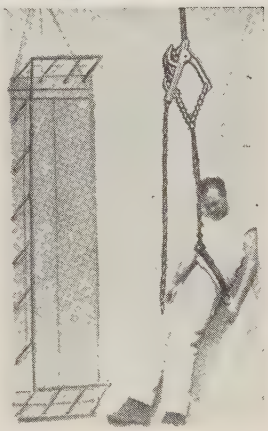
(Use Key # B-28 on Inquiry Card on page 65)

STOP THAT FALL



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Locks automatically, instantly. Slips onto ordinary rope lifeline. Moveable up or down with man. Instant locking position at all times, whether stationary or being moved up or down.

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(Use Key # B-29 on Inquiry Card on page 65)

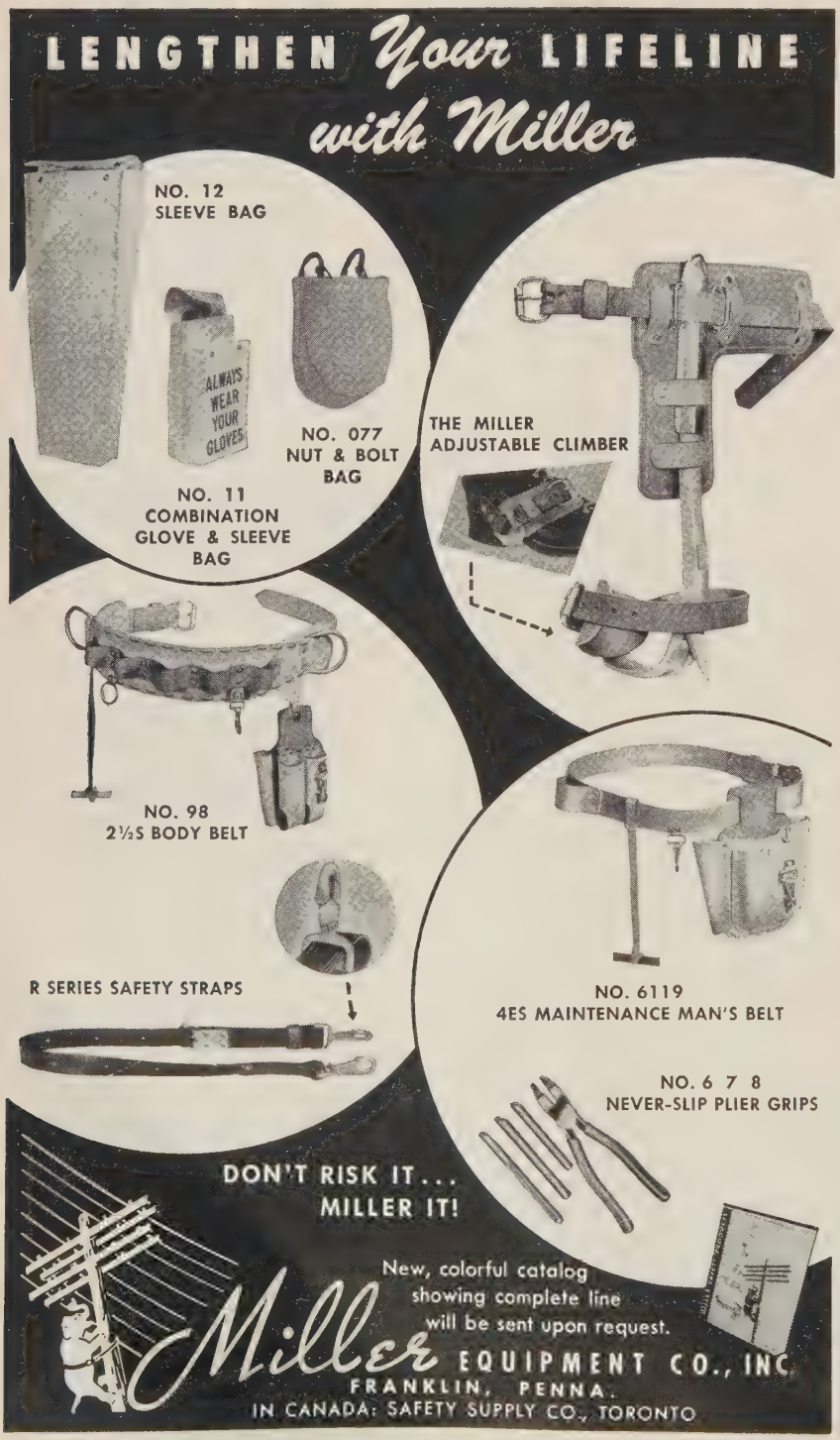
of America has been announced by E. Douglas Reddan, vice president of the Division.

Mr. Carlson brings to his new post an extensive experience in the field of fire protection. For a number of years he was associated with the Factory Mutual Engineering Division.

Bailey Meter Company, Cleveland, Ohio, manufacturer of industrial instruments and automatic control equipment, has announced the establishment of new district offices in Dallas, Texas and Memphis, Tenn.

F. D. Krusemark is manager of the Dallas office, located at 6331 Aberdeen Ave., Dallas 30, Texas. The Memphis office is under the managership of R. E. Byers, and is located at 3256 Hendricks Ave.

The Manco Mfg. Co., of Bradley, Illinois, has announced that they are discontinuing their Manco and Carolus line of bolt cutters and steel strapping cutters. Service for present users of these tools is being taken over by the Roberts Mfg. Co., of Somerville, Massachusetts. The Manco company plans to concentrate on their Guillotine line of hydraulic tools for cutting, punching, and riveting, and on the development of other specialized hydraulically operated tools and equipment.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(Use Key # B-32 on Inquiry Card on page 65)

Safety Appointments

Joseph B. Nighan has been appointed director of safety and security at the Camera Works plant of the Eastman Kodak Company. He has been in safety work since he joined the Kodak Company in 1939 as a safety inspector for accident prevention.

Nighan is chairman of the safety committee of the Rochester Industrial Management Council and vice-chairman of the Genesee Valley Chapter of the American Society of Safety Engineers.

Crucible Steel Company of America has appointed Ernest R. Krause as safety supervisor at the company's coal mine at Crucible, Pennsylvania, according to C. B. Tillson, mine superintendent. Mr. Krause succeeds William E. Hart, who has retired after 24 years of service with Crucible. Mr. Krause assumes his new duties after having served as assistant mine foreman. He has been associated with the Crucible mine activity since 1936.

Michael H. Pendergast, New York State's new Director of Safety, has taken up his duties, succeeding Thomas W. Ryan, former head of the Division of Safety. In his position as head of the State's Safety Division, he will direct the coordinating of the State Fire Training and Fire Mutual Aid Programs, Police Training and Mobilization, State Civil Defense Rescue School, and the vast State Employee Safety Program covering 80,000 State workers.

Spray Painting Schoo!

DATES FOR classes at the DeVilbiss Company school of spray painting, Toledo, Ohio, for the first six months of 1955, have been announced by E. F. Frey.

The instructors, in their teachings which range from the components of the spray painting equipment to actual spraying of paint by each student in the laboratory, stress every controlling factor so essential to producing high quality results at low cost. By demonstrations, it is clearly shown that paint can be sprayed on interiors without undue overspray by controlling pressures and spray technique.

Dates for courses of instruction are: February 7, March 14, April 18, May 16, and June 20. For further information, contact E. F. Frey, The DeVilbiss Co., 300 Phillips Ave., Toledo 1, Ohio.

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

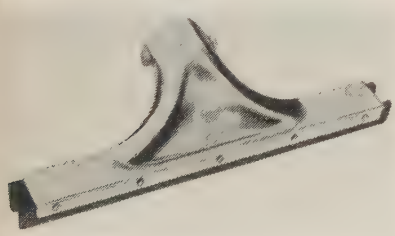
Service Dept.,
SAFETY MAINTENANCE & PRODUCTION

ANTI-SLIP WAX

(Use Key # 791 on Inquiry Card on page 65)

SHEEN, a skid-resistant liquid wax with an unusual new combination of both high initial gloss and rebuffability, has recently been developed by The Penetone Company. The manufacturer states that it is quick drying, with a high gloss, and can be rebuffed.

It is a combination of resins and wax which dries to a rich, deep gloss in 15 or 20 minutes after application. There is no need to buff except for an even higher gloss. After its hard scuff-resistant finish shows signs of wear, it may be buffed to restore the rich lustre. It is safe on all surfaces: sealed wood, asphalt tile, rubber tile, vinyl tile, linoleum, terrazzo, cork, etc. Sheen also provides an added margin of safety in its highly skid-resistant finish. Information and samples are available.

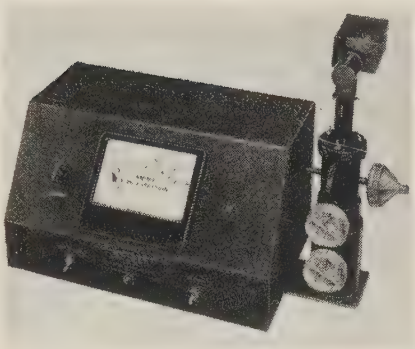


ONE-STROKE SQUEEGEE

(Use Key # 792 on Inquiry Card on page 65)

THE BREUER Electric Mfg. Co., has developed a Tornado one-stroke squeegee for pickup of liquids with commercial and industrial vacuum cleaners. The squeegee features two neoprene blades at the front and three blades in the back that gather liquids on both forward and back strokes. Rubber blades are easily removed with four screws, and nozzles are made of highly polished cast aluminum and designed for straight line draw and maximum suction. Squeegee blade lengths are 15 inches.

This same floor nozzle is also available with fiber shoes for use on concrete or abrasive floors, horse hair brushes for floor or carpet use, and felt or rubberized fabric shoes for use on highly polished floors and other surfaces which must be protected.



AEROSOL AND SMOKE PHOTOMETER

(Use Key # 793 on Inquiry Card on page 65)

THE NEW Sinclair-Phoenix forward-scattering aerosol and smoke photometer is announced by Phoenix Precision Instrument Co. It is a rugged, portable unit designed for the study, measurement, and control of air pollution and particulate matter suspended in aerosols. It has numerous other applications such as a control and research tool for rapid evaluation in filter designs, testing efficiency of fans, air-wash systems, and air conditioners or in medical research for studies and measurement of respiratory accumulation of dust and smoke particles.

This instrument features extreme sensitivity by measuring forward-scattering at small angles which may be 100 to 10,000 times greater than the scattering in all other directions. Many standard and special accessories are available such as recorders, logarithmic and linear amplifiers which further extend the instrument's usefulness.

IMPROVED STATIC CONTROL

(Use Key # 794 on Inquiry Card on page 65)

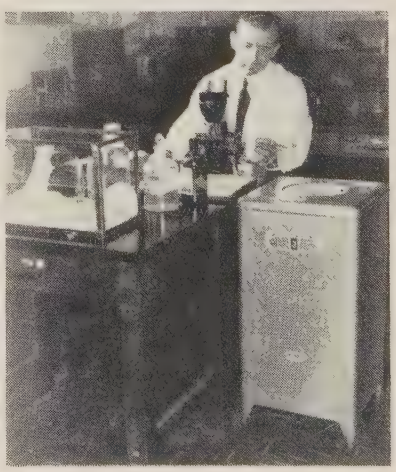
THE HEWSON Company, Inc. has announced that its line of TAKK High Speed Static Control Systems has been completely redesigned to incorporate a new and superior resistance material of its own design and manufacture. This resistance material not only makes possible more effective control of static electricity charges on all types of high speed industrial processing operations but also gives a higher margin of safety on use in hazardous areas. Full control of static electricity charges is also maintained over a longer period of time. This results in lower maintenance costs in the use of the TAKK equipment.

AIR CLEANING UNIT

(Use Key # 795 on Inquiry Card on page 65)

A ROOM air cleaner originally developed by Raytheon Mfg. Co. for the relief of sufferers from hay fever, asthma and other allergies is finding application in industrial and commercial fields. The small, portable, caster-mounted machine is said to remove 99 percent of all smoke, dust, pollen and some types of bacteria from the air in a room.

The "Micronaire" cleaner is an electrostatic precipitator that traps airborne particles by a form of magnetic attraction. The charged metal plates which can capture even the smaller particles are easily removed for periodic cleaning. The unit is being used to provide dust-free air for quality control, better service or maintenance purposes in telephone switch-and-frame rooms, fine-finish paint and lacquer rooms, photoengraving, film processing, optical and vacuum tube manufacture, bacteriological laboratories, etc. In the business world, the air cleaners have proved useful in clearing the smoke and stale air from conference rooms and offices.



POWER-LINE PROXIMITY ALARM FOR CRANE BOOMS

(Use Key # 796 on Inquiry Card on page 65)

A NEW model ECA Electro-Alarm Crane Warning Device has been announced by Electro-Alarm Safety Devices. The equipment consists of a small detector box mounted at the end of the boom and connected by an electrical cable to the control and panel case in the crane cab. The device can be adjusted so that it will warn operators when the crane boom comes within anywhere from 8 inches to 400 feet of a power line.

The alarm is sensitive to AC and DC voltages, active telephone lines, street car lines and some shallow underground cables. Standard equipment is for crane with 50-foot boom, but auxiliary equipment can be provided for longer booms. The device can be easily installed and functions on any battery source from 6 to 36 volts.

FOG FILTER

(Use Key # 797 on Inquiry Card on page 65)

A HIGH pressure fog method of dust and fume collection has been developed by The R. C. Mahon Co. as a new tool for both internal and external air pollution problems. It is specifically designed for some of the more difficult problems involving contaminants of less than 10 microns; and is also capable of handling high temperature fumes without fire or explosion hazard. The filtering fog is released through spray nozzles at 300 to 500 lbs. pressure. Less water is required than in low pressure scrubbing towers, and the fog is also able to effect a certain amount of deodorization.

As shown in the picture, the contaminated air enters the collector through the inlet at the upper left. Fog nozzles arranged around the outside of the container and set at a slight angle force the air to spiral downward. The water and contaminants are drained out at the bottom, while the cleaned air rises through the center duct and the curved outlet at the top.

RUBBER INSERTS FOR DRUMS

(Use Key # 798 on Inquiry Card on page 65)

REMOVABLE rubber drum inserts, under the trade name of "Drumserts," are available from Automotive Rubber Company, Inc. These rubber inserts are preformed, independent linings made of ARco-compounded neoprene or sheet rubber. "Drumserts," it is claimed, can be inserted in any standard drum simply and quickly. The rubber insert is merely set in the drum and the "lip" is lapped over the top of the drum and pulled taut. This permits the "Drumsert" to grip the drum and maintain a stationary position regardless of handling.

The units are said to render any standard 55-gallon drum or barrel capable of holding acids and other corrosive materials for electroplating solution makeup; for acid dip, pickle, strip operations; for solution storage; as test tanks, and for laboratory experimental purposes.

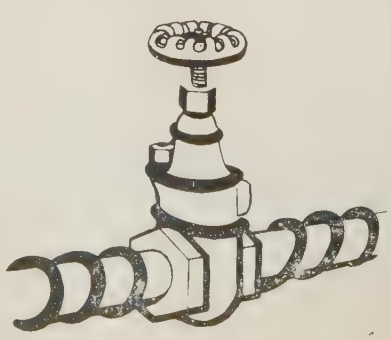
The rubber inserts can be removed from drums in a matter of seconds by merely peeling the "lip" that laps over the sides of the drum. Rubber "snap-on" lids for drums are also available.

HEATING AND DE-ICING WIRE

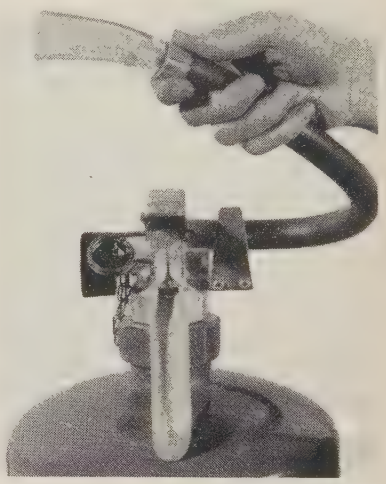
(Use Key # 799 on Inquiry Card on page 65)

A NEW type of copper-clad electrical heating element is announced by Continental Electric Equipment Co. "Heatflex" mineral insulated heating unit can be *wrapped around* almost anything, *immersed* in any solution that is non-corrosive to copper or *enclosed* in any material.

The new heating element consists of a seamless sheath of self-annealing copper in which is enclosed a pair of copper resistance wires, spaced and insulated by a tightly packed magnesium oxide. Heatflex can be formed to *any* surface . . . tanks, pipes, valves, switches . . . without tools. It can be operated at *any* temperature from below freezing to 482°F and easily controlled to precise temperatures. Among the advantages listed by the manufacturer are: heat-resisting, non-flammable, mechanically rugged, self-grounding, neat and attractive, compact, flexible, waterproof, chemical resistant, extremely resistant to thermal shock and non-deteriorating because of weather or time.



It has been used for a wide range of applications. Outstanding success has been found in keeping viscous materials like heavy oils, asphalt, molasses, paraffin flowing; removing or preventing ice formation on outdoor equipment, steps, walks, driveways, platforms, catwalks, ladders. It has been used to heat tank car contents for quick dumping, to prevent freezing of water seals on gas holders and for controlling ice formation in refrigerated rooms.



PLASTIC NOZZLE EXTINGUISHER

(Use Key # 800 on Inquiry Card on page 65)

THE NEW American-LaFrance Dry Chemical Fire Extinguisher is ready at a second's notice to smother gas, oil, grease, or electrical fires. Already pressurized to 150 psi with air or nitrogen, you just pull a pin and squeeze the lever. The special new transparent nozzle, molded of Eastman chemical's corrosion-resistant Tenite butyrate plastic, fans out a flat discharge pattern in downward direction over a wide area. Metered valve passageways maintain a dense, uniform discharge from the first release to the last. If only partially discharged, the extinguisher can be left standing to guard against reflash, without loss of pressure. The nozzle fits over a metal holder when not in use.

The unit is simple to service as well as to operate. Its valve gauge gives a constant reading of pressure, indicating at a glance when recharging is necessary. The valve and siphon-tube assembly removes as a single unit to leave an ample opening for recharging. During operation of the extinguisher, any chance obstruction of the discharge outlet is quickly revealed through the clear Tenite nozzle.

PAINT-FLOATING CHEMICAL

(Use Key # 801 on Inquiry Card on page 65)

PRESTO-MAT, a completely new liquid chemical for water wash paint spray booths has been announced by the Chamberlain-Haber Chemical Co. According to the manufacturer, the new compound is especially effective because its liquid form means no pre-mixing, perfect solubility and no sediment or clogging. The manufacturer further states that since it is compounded double strength it is more economical to buy, use, store and ship.

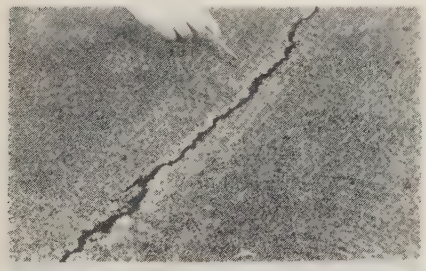
Presto-Mat is added to the water in the tank reservoir where it combines with the paint or lacquer sludge to form a floating mat. This mat is easily skimmed from the surface of the tank reservoir so that the spray booth curtain, nozzles and all metal parts are always kept free and clean. It makes possible a full and heavy water curtain, maximum air velocity, maximum paint reclamation and a minimum of spray booth maintenance.

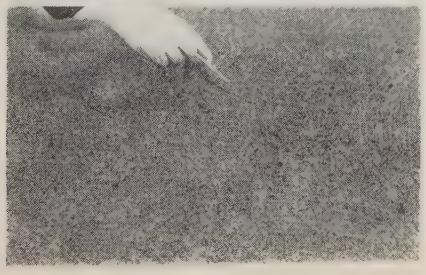
FLOOR CRACK FILLER

(Use Key # 802 on Inquiry Card on page 65)

A NEW PLASTIC material formulated for the specific purpose of repairing floor cracks and preventing further surface deterioration is announced by The Monroe Company, Inc. Known as "Jiffy Floor," it can be applied without interfering with production or traffic and withstands heavy loads immediately. It is a fine granular, ready-to-use plastic product that readily fills hairline cracks, shallow holes, spalled floors or expansion joints, as shown in the "before and after" photographs.

The filler contains no asphalt, cement, sand or gravel. It will not crack, crumble or curl; can be applied either indoors or out; and is not affected by temperature changes. When applied, Jiffy Floor is said to be waterproof, dustless, skid-proof and noiseless. It is delivered in 5, 10, 30 and 55-gallon drums, ready for use. No mixing is required. An outstanding feature is its extreme ease of application which consists merely of priming, filling and tamping.





SULPHUR DIOXIDE DETECTOR

(Use Key # 803 on Inquiry Card on page 65)

THE NEW "Sulphur Dioxide Gas Detector," announced by Mine Safety Appliances Company, is said to be an exceptionally accurate yet easy-to-use portable instrument for quickly determining SO_2 concentrations of 0 to 50 ppm. Maximum allowable concentration of sulphur dioxide gas for working atmospheres is 10 ppm for an 8-hour exposure, according to the American Conference of Government Hygienists.

The user squeezes the aspirator bulb three times for an adequate air sample, then reads the SO_2 concentration on a graduated scale on the detector tube. The reagent in the tester tube turns from blue to white, and the length of decolorizaion is directly proportional to the percentage of SO_2 in the sample. The device should be valuable to many industries: fertilizer, petroleum refining, chemical manufacture and processing, iron and steel, coal mining, paint and pigment, rayon and cellulose, pulp and paper, explosives, textiles, rubber and non-ferrous metals. It may also prove useful for periodic checking of smoke stacks.

PAINT STRIPPER

(Use Key # 804 on Inquiry Card on page 65)

A NEW paint stripper, non-dusting, has been field tested by the Van Straaten Chemical Company, and found to reduce paint stripping time to one third. The first test was on wire screens used to hold small parts for paint spraying. On the screens were lacquer, aluminum, enamels, red primer, black enamel and some varnish. Each screen had from 50 to 100 coats of paint, some air dried and some baked on. The Vantrol 5610A, used at eight ounces per gallon in a soak tank, stripped the paint in three and a half hours. The floor grids from the spray booths were cleaned with the Vantrol compound in three hours, where they previously had taken two nights of boiling.

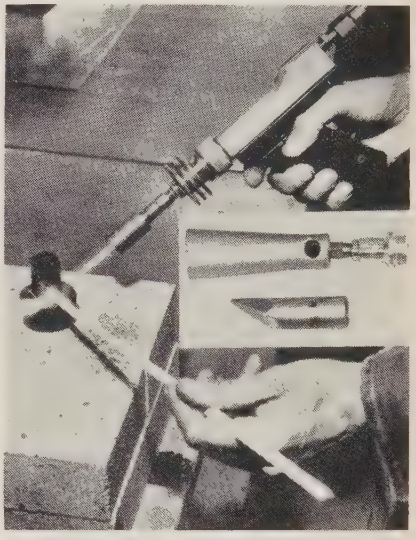
In addition to its ability to strip paint in a fraction of the time ordinarily required, the Vantrol 5610A is effective in removing heavy greases, mineral oils, heavy carbonized soils, crater compounds and heavy sludge. It is a heavy duty alkaline tank type cleaner with a high wetting and penetrating phase. It also has a combination of solvents to aid in the emulsification, penetration and softening of dirt and paint films. The compound is non-toxic and non-flammable and requires only the precautions necessary for handling any heavy-duty alkaline cleaner.

FLOOR ABSORBENTS

(Use Key # 805 on Inquiry Card on page 65)

TWO ALL-PURPOSE absorbents for floors are offered by Bridgeport Sawdust & Shavings Co., Inc. Both are chemically inert and harmless to skin, clothing and equipment. When sprinkled on liquid spills on floors, they quickly absorb the oil, water or grease to eliminate slipping accidents and reduce floor maintenance and fire hazards.

"Tru-Sorb," a diatomacious earth, has an unusually high saturated grain strength and would be particularly suitable around machines or equipment that tend to leak or spray. "Tru-Sorb-F" is a Fuller's earth and has a very rapid absorption rate, making it suitable for emergency clean-up of liquid spills.



HEATING GUN

(Use Key # 806 on Inquiry Card on page 65)

THE Fire Gun, a new, portable hand-operated heat tool that burns clean, low-cost propane with a heat range of 4,000 to 117,000 BTU per hour, is now available for small or large heating applications. According to the maker, Fire Gun Sales Corp., this trigger-controlled Fire Gun is ideally suited for a multitude of heat uses, such as soldering, tinning, brazing, preheating, thawing, plasticizing and paint removal.

The 3650° F Fire Gun flame burns clean with no carbon deposit or "blackened area" because the burner tips give complete combustion of the propane, using oxygen from the air. It operates at low cost and the propane fuel is readily available.

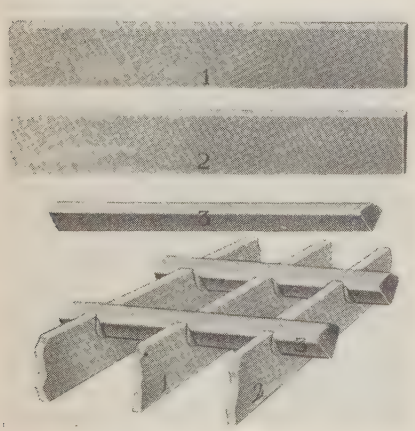
Basic Fire Gun kit includes a heat concentrator tip, a high heat or blow torch tip, a soldering iron tip which is equivalent to a 12 lb. commercial iron, hose, regulator, pressure gauge, and steel carrying box.

IMPROVED SUCTION SWEEPER

(Use Key # 807 on Inquiry Card on page 65)

ANNOUNCEMENT of the redesigned and improved Floormobile is made by Handling Devices Co., Inc. The new model is more compact, lower, and more rugged. It has an improved filter bag construction. Safeguards against fire hazards are now standard on the gasoline engine and include a fuel tank safety fill and vent cap, metal sediment bowl, spark arrestor and push-button engine shut-off.

Completely self-contained, the Floormobile has been accepted as one of the most practical and economical ways to clean dust and dirt from large areas of floor space. The powerful suction nozzle, with a wide orifice, mounted just above the floor surface, will pick up dust as well as dirt and trash at the rate of 20,000 square feet an hour. Less airborne dust means less absenteeism because of fewer germ-laden dust particles floating in the air, less cleaning of fixtures, motors, wires, work in process and finished stocks, less fire hazard, and cleaner, fresher merchandise.



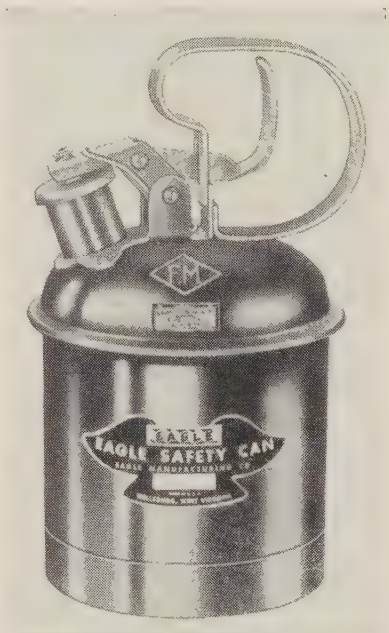
WELDED GRATING

(Use Key # 808 on Inquiry Card on page 65)

THE ADDITION of a new type of welded grating to its line of grating and stair treads is announced by Dravo Corporation, Machinery Division. Known as Tri-Forged Welded Grating, this new product is of all-welded, one-piece construction with rectangular openings. It is made with cross bars permanently welded to rectangular bearing bars. Double triangular cross bars were used because of their ideal geometrical shapes for pressure welding. Forge welding of the cross bar to the bearing bars is done under a constant pressure both during and after the electrical welding for perfect fusion.

The tops of these double triangular cross bars form non-slip edges for greater traction and safety. Where sure footing is needed in extremely slippery areas, bearing bars can be supplied with serrated edges. The openings between bearings and cross bars provide for the passage of a maximum amount of light and ventilation. With the complete absence of acute angles, nuts, bolts and rivet heads, the chance of clogging with dirt or grease is eliminated. This also makes maintenance and painting easier.

Tri-Forged Welded Grating complies with the requirements of Federal Specification RRG-661a, Type 1 and Navy Specification 12G7, Type A class a and b. Panels are available in widths up to 3 feet. Lengths can be exactly as called for, up to 20 feet. It can also be manufactured with a great variety of bearing and cross bar spacings, and cut to irregular shapes to meet specific service requirements.



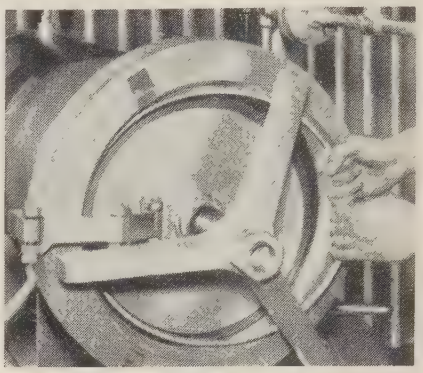
TRIGGER-GRIP SAFETY CANS

(Use Key # 809 on Inquiry Card on page 65)

A COMPLETE new line of safety cans for use wherever explosive or flammable liquids are handled is being introduced by Eagle Manufacturing Co. The new line is approved by Underwriters' Laboratories and Factory Mutual for handling or storing oil, gasoline, or similar liquids in the factory, home, farm, camp, service station, etc.

Featured in the new Eagle series are safety cans of five sizes: 1 qt., 2 qt., 1 gal., 2½ gal., 5 gal. The three smallest sizes feature a one-handed trigger-grip handle, while the two largest safety cans have free-swing handles. Both types have a self-adjusting protective guard cap which prevents leakage if can is upset.

All Eagle safety cans are of one-piece construction with no seams, as body and breast are welded together electrically under electronic control. The entire line is made from heavy 24-gauge terne steel which is given a high-gloss red baked finish. Bottoms are reinforced with heavy-gauge steel hoops.



NEW PRESSURE CLOSURE

(Use Key # 810 on Inquiry Card on page 65)

AN ENTIRELY new type pressure closure for all types of pressure vessels and piping systems has been introduced by the Sillers Engineering Co. Called the Flex Ring Closure, it incorporates an internal pressure closing, metal-to-metal seal principle. It seals tighter as the pressure upon it increases.

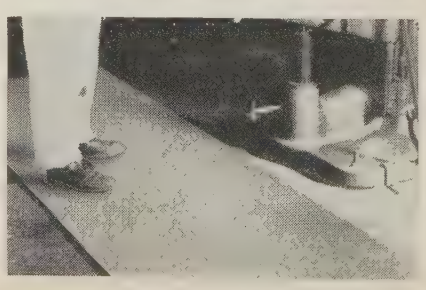
Advantages of the new design are: less time in opening and closing (only one bolt to operate); less weight; fewer parts; tighter seal, more safety, space saving, and lower initial cost through material savings. The unique feature of the closure is the patented flexible metal gasket which is held in compression between the plug and weld neck. The gasket is flexed to an elliptical shape to allow it to pass through the plug opening. Once in place, tightening the spider nut causes the gasket to return to a round shape for proper seating position.

Standard Flex Ring Closures are available in same pressure ratings as ASA flanges and have same pressure and temperature rating as corresponding ASA raised face flange. Selection of materials, allowable stresses, etc., are in accordance with the latest ASME codes.

FATIGUE REDUCING MAT

(Use Key # 811 on Inquiry Card on page 65)

FACTORIES will find Durapad the answer to employees' foot and ankle fatigue caused by long standing at steam tables,



counters, machines, etc., according to Durkee-Atwood Company, manufacturers of the new Vinyl-faced sponge-rubber padding.

The mat is made of a strong non-staining sponge-rubber compound, with a fabric backing that prevents curling and provides stability. The Vinyl facing protects the sponge rubber against abrasions from metal cuttings, etc. and deterioration by oils and grease. It also resists alkalies and other chemicals.

Durapad comes in 18" and 36" widths and thicknesses from ⅛" to 1", and any length up to 40 yards. Colors are dark green, red brown, gray and black. It cleans easily with soap and water, and solvents may be used for cleaning the surface without damage to the pad.

Besides providing relief from foot fatigue, it serves as an ideal cushion against shock and noise when used under office machines, on counter tops, work tables, etc. It can be die cut for making gaskets.

SAFETY LIFELINE LOCK

(Use Key # 812 on Inquiry Card on page 65)

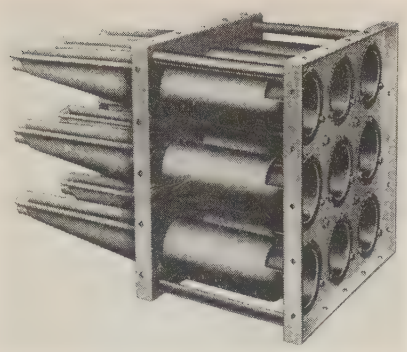
THE SAFETY Lifeline Lock is designed to prevent injury should a workman fall or a scaffold fail. In use, it slips on to the Lifeline rope and moves along the rope with the workman, either up or down, as he slides it to the desired working position.

Falling causes the device to lock instantly, automatically and positively, holding him safe. This device is inexpensive, foolproof and rugged; requires no adjustments. Made by Safety Tower Ladder Co., it is equally effective and positive in its locking action should a workman slip or a scaffold fail while the scaffold is being raised or lowered and the Lifeline Lock is being moved along the rope to a new working position.

GRANULAR DUST COLLECTOR

(Use Key # 813 on Inquiry Card on page 65)

AN OUTSIDE-IN twist that reverses the normal tangential flow of most centrifugal dust collectors is credited with giving American Air Filter's compact, new AMERclone dry granular dust collector high efficiency over a wide range of air volumes. Power plants burning pulverized coal and rock products and dry chemicals plants using large volumes of exhaust air will benefit especially from the development.



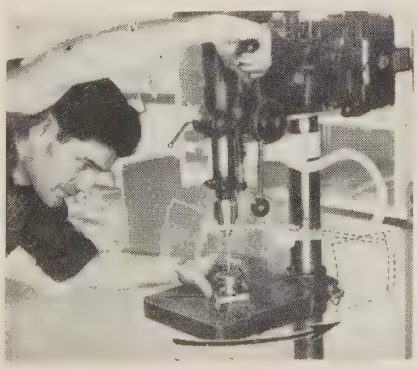
A conical inlet imparts a swirling motion to dust particles, while permitting clean air to travel through the 'Type G" AMERclone tube without changing direction. Each tube has an approach velocity of 1,000 fpm and a cleaning capacity of 333 fpm. Nine tubes are combined in a standard modular cell, which has a nominal rating of 3,000 cfm with a face area only 20" by 20". Any number of the modular cells may be combined to achieve required capacity within available space. With this "straight through" air flow design, the units can handle widely fluctuating air volumes and dust concentrations, as in eliminating "fly ash" when boilers "blow off." A secondary exhauster circuit disposes of 10 percent of the primary air, and collected dust. A test installation traps 3000 lbs. of fly ash per hour.

AAF claims material space savings for the new collector. Built of thick-wall gray-iron castings, with no recirculation of dust load, the tubes are unusually resistant to abrasion. The standard type is limited to temperatures of 750°F. Special materials may be employed for higher temperature applications.

AUTOMATIC CHIP GUARD

(Use Key # 814 on Inquiry Card on page 65)

A NEW, low cost, automatic shield to protect machine tool operators from flying chips is announced by Hard & Co., Inc. When attached to a drill press, for example, the device, known as "Chips Stopped," automatically interposes a shield of transparent plastic to protect the eyes and neck of the operator. When the spindle is within the last half inch of its return travel, the shield begins to retract so that when the spindle is at rest, the shield is entirely out of the way allowing complete access to the work. At the beginning of the cycle the shield moves into position during the first half inch of travel of the spindle and is in position long before the tool contacts the work.



The device is installed on a drill press by clamping the support bracket to the column of the press. An adjustable extension member allows adjustment for column-to-spindle distance. The flexible hose contains the actuating cable and also supports the housing for the linkage which moves the transport arm.

The transparent plastic shield is notched to snap into position in the curved frame. A packet of replacement shields is included.

WELDING HOSE REEL

(Use Key # 815 on Inquiry Card on page 65)

A NEW 150 ft. self-winding reel for welding hose has been announced by makers of the Weldreel. Known as Model OAB, the new big reel features large hose capacity, spring and gear retracting action, easily operated catch for locking hose at desired length and bracket for mounting in any desired position. It was developed to eliminate the safety hazard of leaving unused welding hose on the floor and to increase hose life. It is available from United Specialty Corporation.

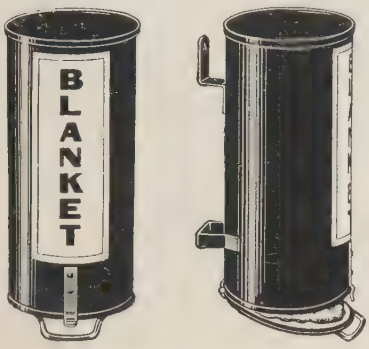
INSULATOR FOR NEON SIGNS

(Use Key # 816 on Inquiry Card on page 65)

A MAJOR STEP forward in reducing fires from faulty indoor neon sign manufacture is claimed for a new, patented, non-breakable insulating sleeve made by the Relyon Products Co. The sleeve completely covers the bare high-voltage transformer terminals, yet, permits the sign to be quickly changed or removed.

The unit consists of one stationary and one sliding "tube" molded of high dielectric material. For access to the transformer

terminal wires, the outer "tube" or sleeve is raised and locked in position. When the work is completed on the sign, a simple twist unlocks the sleeve and permits it to drop down covering the bare connection. Another twist locks it securely in position. Strong, yet flexible, it eliminates the hazardous condition presented by makeshift or broken glass insulators commonly used and prevents accidental contact with the bare, high-voltage sign wires. Conforms to the standards for an approved insulator as written into the Chicago and the National Electrical Codes and is approved by the Chicago Electrical Inspection Department.

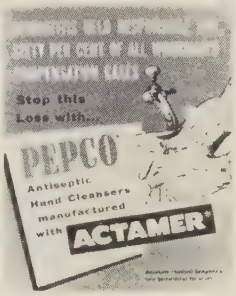


QUICK RELEASE CANISTER

(Use Key # 817 on Inquiry Card on page 65)

AN EMERGENCY Blanket and Quick-Release Wall Canister for use in the event of injury, burning clothing, etc. are announced by Industrial Products Co. It allows for immediate release of blanket; and provides for conspicuous placement throughout the work area in factories, laboratories, construction projects, etc.

Canister is of all metal construction, attractively finished in red enamel. Designed so that blanket only may be removed or the entire unit lifted from the wall and taken to location of use.

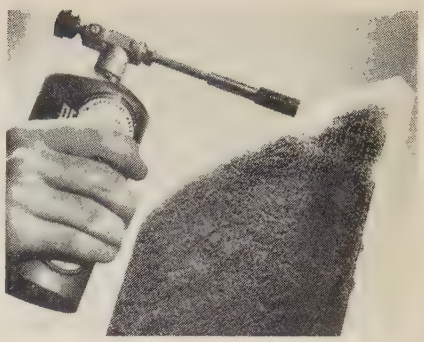


BACTERICIDAL SOAPS

(Use Key # 818 on Inquiry Card on page 65)

THE Pepco antiseptic hand cleansers made by Peck's Products Company are now manufactured with Actamer, new bacteriostat for soap developed by Monsanto Chemical Company for the positive control of dermatitis. The cleansers include four types of powdered soap and a liquid soap.

The company states that regular use of Pepco hand cleansers containing Actamer will reduce skin bacteria by as much as 97%, thus cutting absenteeism as well as eliminating most workmen's compensation claims resulting from skin disorders. The Peck's Company plans to appoint additional jobbers or manufacturer's agents in selected areas. Inquiries are invited.



FIRE RETARDANT PAINT

(Use Key # 819 on Inquiry Card on page 65)

A NEW fire retardant paint which combines superior flame resistance with durability, washability and attractiveness has been developed by The Glidden Company. Called Duo-Tex Fire Retardant Paint, the new coating is a resin-base, intumescent type interior finish that immediately swells and chars on contact with flame or excessive heat to provide a firm, insulating blanket of non-combustible ash over the affected surface.

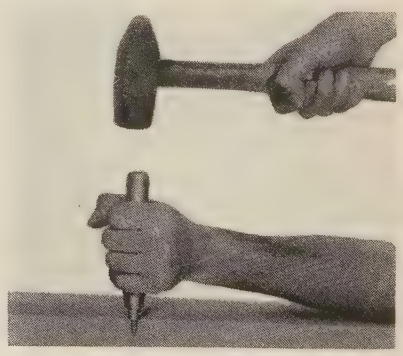
It is available in 12 pastel colors, bears the label of Underwriters' Laboratories, Inc., and meets requirements for the "Slow Burning" classification of Federal Specification SSA-118A. Adaptable to brush or spray application, Duo-Tex is also resistant to mildew and all types of fungus and is more washable than some fire retardant paints. It is recommended for coating of acoustical tile and low-cost wallboard. It may also be recoated with any type of interior paint.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the opposite page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti Fogging Equipment
104	Sweatbands
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
111	Safety Toe Shoes
112	Safety Boots
113	Wooden Sole Shoes
114	Anti-Slip Soles
115	Oil-Proof Soles
116	Welding Helmets
117	Welding Curtains
118	Protective Skin Creams
119	Skin Cleansers & Soaps
120	Hand Drying Equipment
121	Sanitary Drinking Cups
122	Athlete's Foot Control
123	Salt Tablets
124	Noise Control
125	Antiseptic Medication
126	Burn Medication
127	First Aid Kits & Supplies
128	Stretchers & Litters
129	Resuscitators
130	Portable Ventilators
131	Dust & Fume Collectors
132	Carbon Monoxide Control
133	Fire Extinguishers
134	Safety Cans
134A	Extinguishing Ash Trays
135	Fire Pump Equipment
136	Alarms & Warning Lights
137	Safer Solvents
138	Flammable Liquid Pumps
139	Explosion-Proof Lights
140	Electrical Insulation Testers
141	Anti-Slip Flooring & Steps
142	Anti-Slip Waxes & Finishes
143	Floor Cleaning Products
144	Floor Machine Equipment
145	Oil & Grease Absorbents
146	Paints
147	Ladders & Safety Devices
148	Scaffolds
149	Work Platforms
150	Fluorescent Lamp Guards
151	Machine Guards
152	Power Press Feeders
153	Safety Signs
154	Aisle Marking Equipment
155	Safety Awards & Emblems
156	Employee Safety Guide
157	Hand Tools



MASONRY NAIL DRIVER

(Use Key # 820 on Inquiry Card on page 65)

A DEVICE for driving masonry nails into concrete, cinder blocks, concrete blocks, light and medium gauge metals quickly and safely has been developed by the Safety Nail Driver Corp. The new tool features a built-in permanent magnet which holds the nail in the correct position, and a sliding safety shield, which cut working time 80 percent and eliminate the danger of flying nails. Nails driven with the Safe-T-Matic driver have strong holding power and do not require use of star drills, plugs and screws. The new tool takes masonry nails of ½ to 1⅛ in. length. It can be used for fastening clamps, cables, conduits, tubing, brackets, fixtures, bracing, cornices, gutters, leaders, etc.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

PERSONAL PROTECTION

Safety Equipment Catalog 200
E. D. Bullard Co. A well-organized and illustrated 20-page catalog of industrial safety equipment. General sections include: hard hats, first aid units & kits, safety steps, safety hooks, protective hoods, purifiers, respiratory equipment, safety belts, and a list of distributors.

Gloves & Aprons 201
Charleston Rubber Co. More than a catalog is this 27-page booklet describing and illustrating a full line of neoprene and rubber gloves for liquid handlers and electricians, plastic and synthetic rubber sleeves & aprons, and danger flags. Also included is an outline of the use & care of gloves, how to select gloves, and chemical reference charts for neoprene, synthetic rubber and natural rubber.

Guard Your Eyesight 202
Silicone Paper Co. of America, Inc. "Only One Pair to a Customer" is the title of a 14-page cartoon-illustrated booklet on sight and eye safety. It entertainingly presents information on how the eye works, glasses vs. eyestrain, aids to good vision, eye accidents, etc.

Spectacle Type Goggles 203
Fendall Co. A new bulletin outlines the features of a safety goggle styled to resemble personal glasses: a new glass lens shape for better protection and appearance, metal or acetate frames, new temples and insulation, available with wire or plastic side shields if desired.

BUILDING MAINTENANCE

Washroom Survey Cards 204
Bobrick Dispensers, Inc. Pocket-size washroom survey check-list cards are available to maintenance men for noting conditions of washroom equipment and their recommendations for improvement.

Floor to Ceiling Cleaning 205
Breuer Electric Mfg. Co. A well illustrated 8-page folder shows versatile portable vacuum units are not only for general maintenance but also for specialized jobs like furnace cleaning, sludge removal, spraying, etc. The bulletin also shows complete construction details of the units.

Scaffold Safety Hook 206
Stuart D. Brown. Illustrated folder shows how a metal cleat-hook can be used to replace knot tying in making and operating bos'n chairs and swinging scaffolds.

FIRE PROTECTION

Combustion Control System 207
Combustion Control Div., Electronics Corp. of America. This installation bulletin gives complete data with text and diagrams on a flame failure protection system for light oil, gas, or oil & gas combination burners. The system uses the new type of flame scanner utilizing lead sulfide cell.

Combustible Gas Analyzers 208
Mine Safety Appliances Co. A complete line of combustible gas analyzers and alarms are described in a 20-page brochure. The informative material includes parts descriptions, typical installations in various industries, design of alarm systems, and instruments to protect against most of the known combustible gases & vapors.

Fire-Resistant Hydraulic Fluid ... 209
Organic Chemicals Div., Monsanto Chemical Co. This 20-page booklet includes a step-by-step check list for converting a system to a fire-resistant hydraulic fluid. It lists many types of equipment and industries where the fluid has been used successfully and shows its safety features and other properties.

Neon Sign Sleeve 210
Relyon Products Co. This bulletin describes a protective sleeve to replace the easily breakable glass sleeve on indoor neon signs. Use of the new sleeve prevents exposure of high-voltage wires that can start fires and endanger personnel.

Automatic Extinguisher 211
Standard Safety Products Co. An automatic vaporizing liquid extinguisher that can be hung over electrical and flammable liquid equipment is described in this bulletin. The unit has a fusible sprinkler head that discharges carbon tetrachloride automatically when the temperature reaches 165 degrees.

AIR CONTROL

Warm Air Space Heaters 212
Dravo Corp. A brochure of engineering case studies describes eight metalworking applications where space heaters were used to temper large volumes of fresh make-up air and to vent toxic or noxious fumes, odors and dusts.

Dust Collector 213
American Air Filter Co., Inc. This bulletin describes a new dry centrifugal dust collector which utilizes a cluster of several small cyclone tubes and a secondary air circuit for removing dust particles.

MISCELLANEOUS

Rubber Hose & Belting 214
Quaker Rubber Corp. This 58-page general catalog of industrial rubber products, in addition to giving full specifications on belting, hose, packing and molded rubber products, provides informative material on basic types of conveyor belts and hose constructions, chart of hose applications, how to select hose and make it last.

ABC's of Spray Painting 215
DeVilbiss Co. An instructive 64-page booklet, written in nontechnical language, offers a comprehensive analysis of spray painting equipment, operation and maintenance, and lists remedies for troubles that may affect a good finish.

Sound Films 216
Westinghouse Electric Corp. This 36-page catalog provides complete data on the free
(Continued on next page)

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READER'S INQUIRY CARD

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NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item.

FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

February, 1955

Please send me the following free data (Remember to fill in your name and addr

PLEASE PRINT

Name _____ Title _____

Company Name _____

Street Address _____

City _____ Zone _____ State _____

Free Bulletins (Cont'd)

motion picture and slide films available from this company. Films are classified as: general interest, product information, and training & instruction courses. For each film there is a list of occupational groups for whom the film should have special interest.

Portable Tables & Stands 217
Haldeman-Homme Mfg. Co. Portable, folding tables, benches, bleachers, stands, etc. are described and illustrated in this bulletin which emphasizes the economy of storage space and speed of erection of these units.

Permanent Magnetic Pulleys 218
Homer Mfg. Co. Applications and features of permanent magnetic pulleys are given in this 8-page bulletin, which includes data, diagrams and guide for selecting the proper size unit for removing tramp iron from sand, slag, chemicals, cement, foods, feeds, etc.

Stainless Steel Welding 219
Babcock & Wilcox Co. Informative folder outlines the welding characteristics of both austenitic and ferritic grades of tubular stainless steel and discusses proper joint design. It also describes various welding methods and recommends procedures in arc welding.

Ultrasonic Thickness Testers 220
Branson Instruments, Inc. Five models of ultrasonic thickness testing instruments are described in this 6-page catalog. The portable, battery-powered devices can measure the thickness of materials from one side without damage. Used in inspecting tanks, pipes, ship hulls and production measuring of plates, castings, sheets, etc.

Weed Killer 221
American Potash & Chemical Corp. Service bulletin on a borate weed killer shows how the product permanently sterilizes the soil under asphalt paving to prevent growth of plants.

Index to Advertisers and their Agencies

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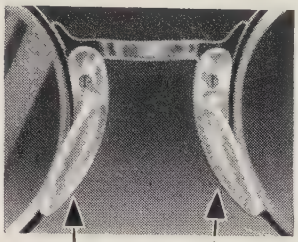

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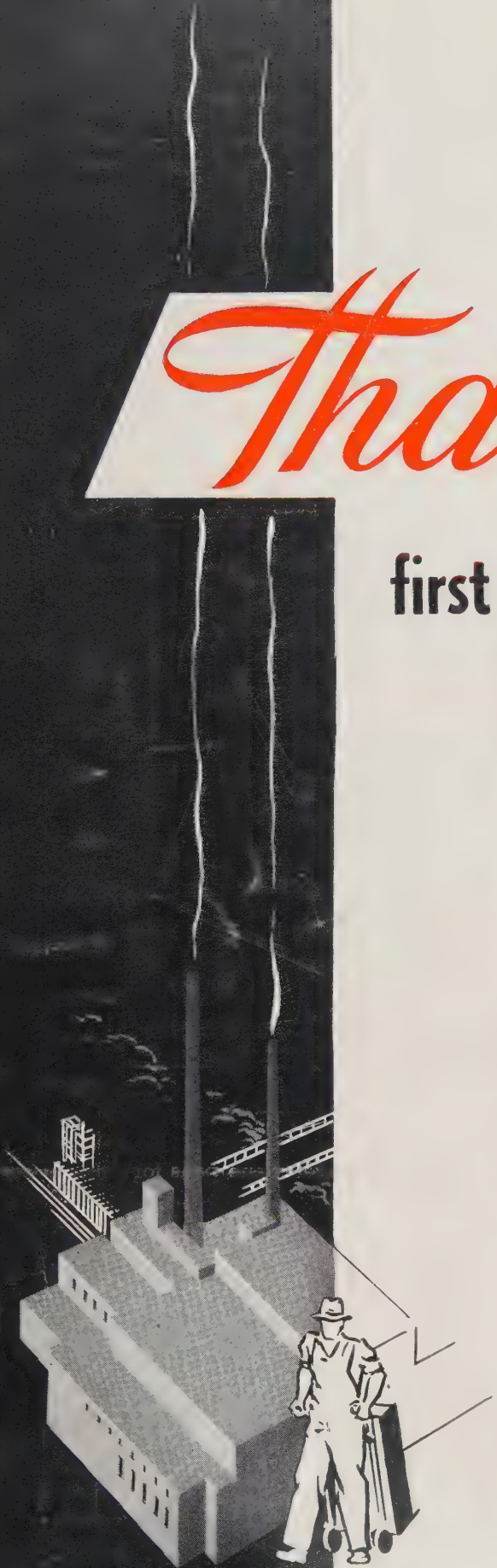
CESCO

CESCO FOR SAFETY

(For details, use Key # B-30 on card on page 65)



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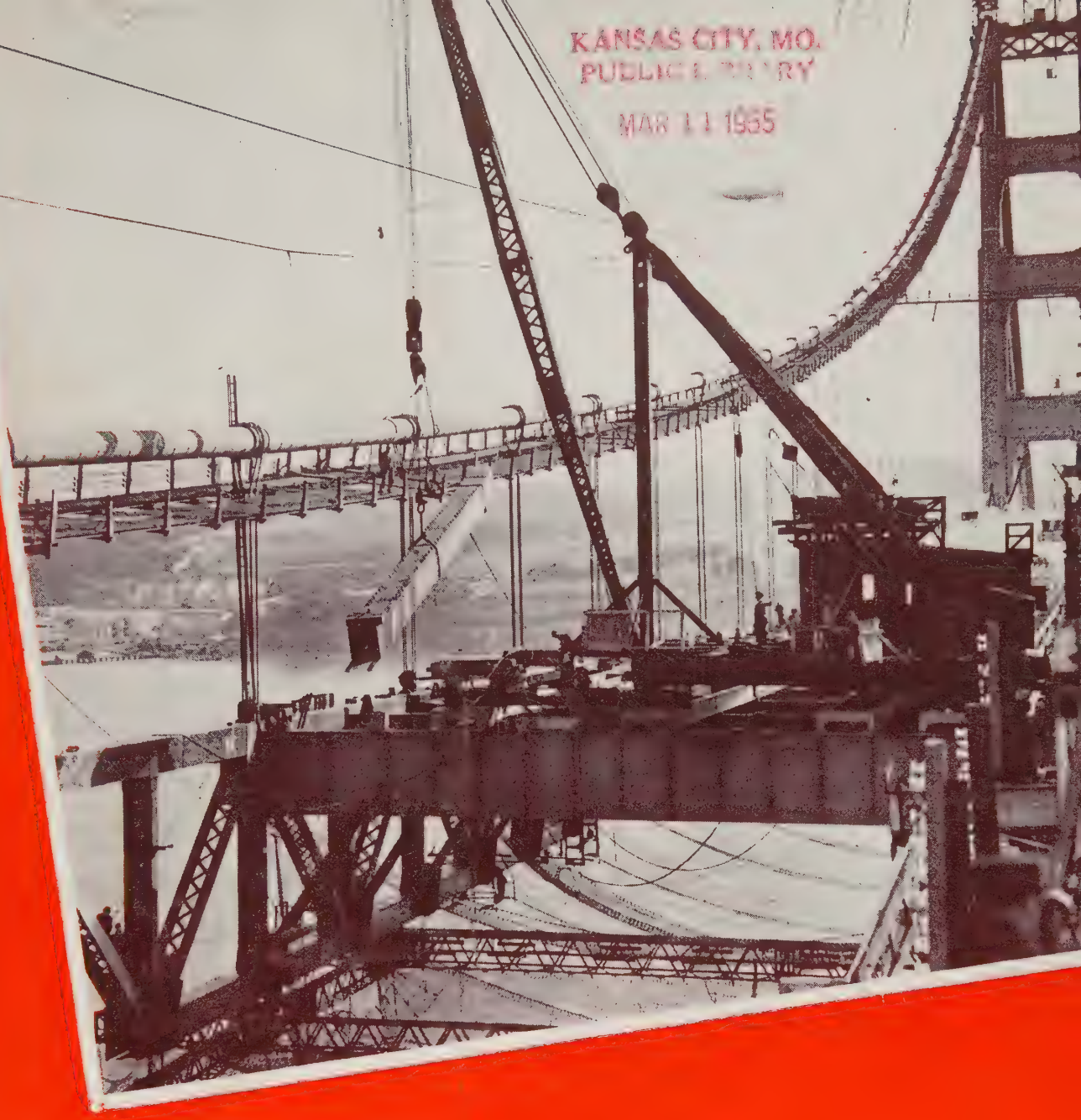


Safety Maintenance and Production

EST. 1901 AMERICA'S PIONEER MAGAZINE IN ITS FIELD

MARCH, 19

Eye Protection

This

NEW FLEXIBLE MASK GOGGLE

Offers Excellent Impact Resistance!

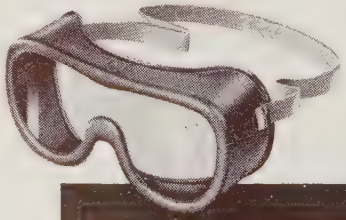
LIGHT...COMFORTABLE INEXPENSIVE

Here's our new moderately-priced No. 482 Flexible Goggle of the single aperture mask type. It's light in weight — fits the face snugly and comfortably with a cushion-like effect. Extra wide and with ample clearance, it can be worn over most types of personal glasses or Safety Rx glasses. The interchangeable one-piece acetate lens is *optically correct**, and offers superior resistance to impact.

While made of a soft plastic material for flexibility, frame is solid and fits facial contours closely for full protection. There is an unusually wide field of vision for worker comfort, safety and efficiency.

Lens is easily removed and replaced and is available either clear or in green acetate. Elastic headbands are easily adjustable.

Goggle can be adapted for use as a chemical goggle by eliminating perforations in frame and fitting with vinylite lens and adjustable plastic headband. It is resistant to acids and alkalis. When ordering for chemical use please order as No. 484 or 485.



No. 482 Clear Frame, Clear or Green Lens

No. 483 Green Frame, Clear or Green Lens

No. 484 Chemical Goggle, Clear Frame, Clear or Green Lens

No. 485 Chemical Goggle, Green Frame, Clear or Green Lens

RECOMMENDED USES:

For protection against flying particles striking from any direction, on such operations as babbitting, chipping, cutting rivets, light grinding, on hand or machine tool work, or in occupations where spark or explosion hazards are present.

†T.M. Reg. by American Optical Company

American Optical

SAFETY PRODUCTS DIVISION

*The AO trademark, and the engineering and research in back of the trademark, are your assurance of optically correct eyewear with every AO goggle.

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For details, use Key # C-1 on card on page 75)

The Lady Agrees . . .

It Takes Foresight TO SAVE EYESIGHT

1. To encourage the practice of eye safety.
2. To keep safety eyewear—glass or plastic—comfortably clean and clear.
3. To keep goggles free from steam and fog for a working day.
4. To make workers willing wearers of safety eyewear.

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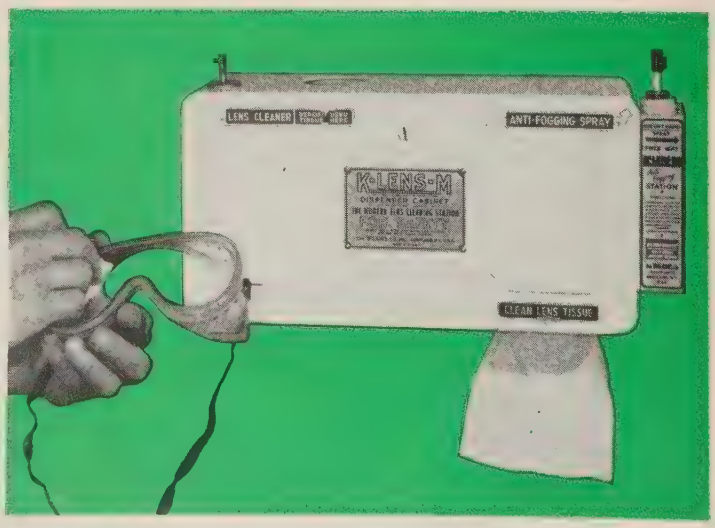

See our Exhibit in Booth 57, Greater New York Safety Council Show
(For details, use Key # C-2 on card on page 75)

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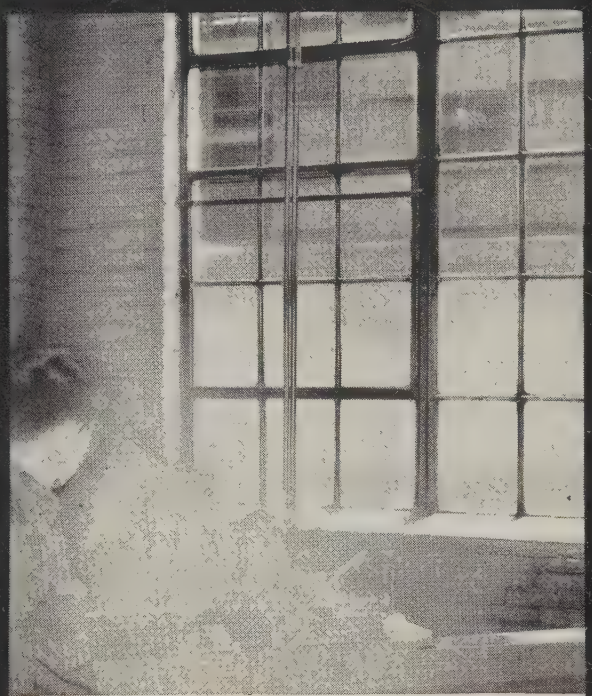
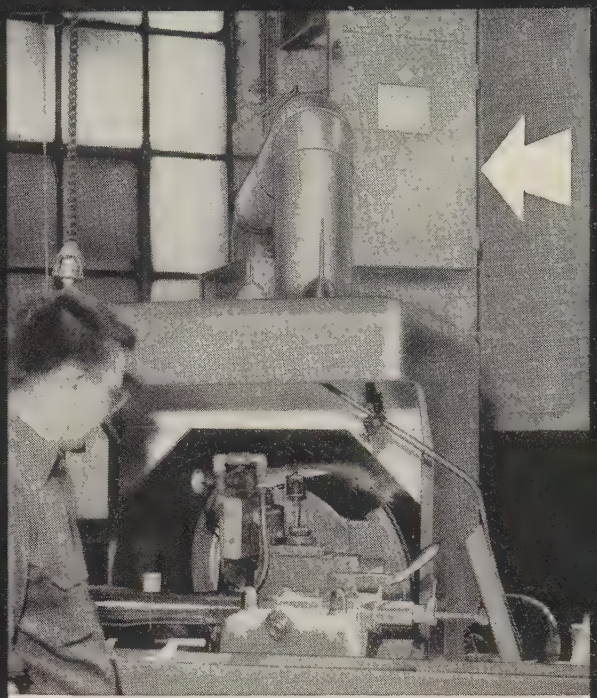
Fact:

Westinghouse Precipitron Eliminates Coolant Oil Vapor as Hazard . . . Pays for Itself by Saving Oil . . . Increasing Efficiency



Before installation of Precipitron Oil Mist Control, this high-speed grinder developed as much as 10 gallons of oil vapor in a single shift. Result: menace to workers' health . . . fire hazard . . . efficiency depressant.



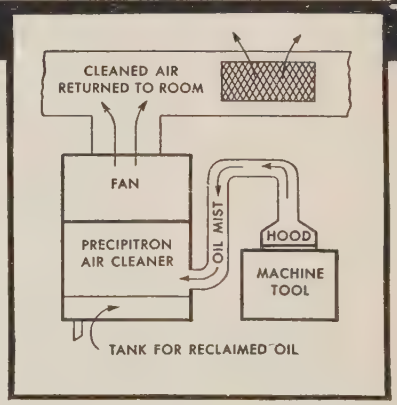
After installation of Precipitron Oil Mist Control, oil vapor from the same high-speed grinder is no longer a problem. Precipitron traps the extremely small particles of oil, dirt, and smoke—electronically—leaves air clean, safe.

Electronic air cleaners do what mechanical air filters cannot do

Westinghouse Precipitron Oil Mist Control is the *positive* way to free your plant of dangerous, costly oil vapors. Precipitron improves visibility, boosts operating efficiency, eliminates hazardous working conditions, strengthens employee morale—and pays for itself at the same time!

Present installations show savings of thousands of dollars yearly, directly in fuel, housekeeping expenses and salvaged cutting oil, indirectly in increased efficiency.

MORE FACTS? Call your nearest Westinghouse-Sturtevant Sales Engineer . . . he's the "Man with the Facts" on heating, air handling, and electronic air cleaning . . . or fill in the coupon below.



Here's how Precipitron works: Collection hoods catch oil vapor at source. Quiet, efficient Westinghouse fan units draw coolant-laden air through Precipitron air cleaners—oil, smoke, fumes are completely trapped. Operating costs: pennies per week.

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Westinghouse

J-80431

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Sturtevant Division, Dept. 18B
Hyde Park, Boston 36, Mass.

Please send more information on your Precipitron.

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SAFETY MAINTENANCE & PRODUCTION

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EST. 1901

VOL. 109, NO. 3 **MARCH, 1955**

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Life Nets Used in Bridge Construction
By courtesy of E. D. Bullard Co.

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

It's Safe to Say

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★ SERVANT, NOT MASTER

QUITE a few years ago—1562 it was—a gentleman named Bowen in his "Bulwark of Defense" pointed out that fire and water are good servants but bad masters. After a glance at the fire loss figures in this country for the year just past, it would seem that the phrase takes on added significance in these days of inflated values.

Obviously, the best time to fight fire is before it occurs and the most valuable form of fire control is fire prevention. Just as safety at its ultimate however, is still within the realm of Utopia, so fire too can break out when least expected.

It has been estimated that fire destroyed more than 870 million dollars of property in this country alone last year—an insignificantly slight decrease as compared with 1953 but substantially more than the fire losses of just two years ago.

Contributing factors to the huge fire losses include the increased exposure to fire resulting from rising employment, inferior building construction and of course larger replacement costs.

Improved construction cannot be considered a cure-all for every fire loss since many large industrial fires have been traced to higher combustibility of building contents, improper storage of flammable substances and the age-old problem of human indifference.

Good maintenance and fire prevention are interchangeable. Buildings of the most modern design and fire-resistive construction can present the most dangerous fire hazard if poor housekeeping is tolerated. Dirt and disorder imply inexcusable laxity in observing those rules designed to provide safety and efficiency.

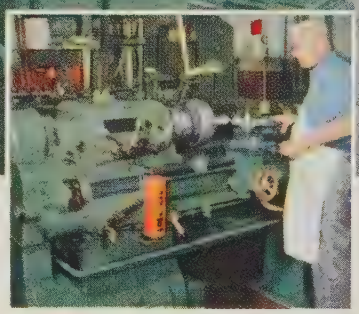
Discounting the deliberate action of an arsonist, practically every fire results from bad management. Conversely, fires are virtually all preventable by the observance of safe practices through the combined medium of safe building design and construction; proper maintenance and adequate provision for controlling incipient fires.

So long as fires do occur, the danger of inadequate, make-shift fire protection must be recognized. It has been said that a conflagration is merely a little fire that got away. That being true, many fires can be controlled in their incipient stage when scientifically designed and approved methods of extinguishment are employed.

With the march of progress in industry, there usually follows the introduction of new hazards which must be controlled if we are to cope with the senseless waste of nearly a billion dollars in a single year.

Great as the fire loss can be when viewed as a direct loss of property, the indirect loss caused by fire increases the known figure to an incalculable degree.

Unemployment, decreased production and hidden costs make fire one of the heaviest financial burdens imposed upon our nation's economy. And so, Sonny-boy, tossing it back into the laps of the fire insurance companies to whom premiums are paid is the most unrealistic viewpoint in the world. H.A.



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By reducing eye fatigue, properly engineered colors aid operators to make world-famous camera equipment with less re-work and scrap!

PITTSBURGH'S PAINTING SYSTEM of COLOR DYNAMICS, purposefully used on walls and machines in the plants of Graflex, Inc., of Rochester, N. Y., improves the efficiency, safety and morale of the operators who make the world's best-known high-speed cameras.

Photographic equipment made by this pioneer maker is known to press and cameramen for its versatility and reliability. Industry and military use its identification and microfilming cameras. Telephone companies use its meter-recording cameras. To the Armed Services, Graflex is a leading source of combat and aerial cameras, artillery telescopes and fire-control devices.

The many ways in which operators in the Graflex plants benefit by the use of COLOR DYNAMICS are best summarized in this comment of M. B. Moore, vice president and factory manager:

"**Because** of the precision our production requires, it is important that our operators have the best possible seeing conditions. By painting walls and ceilings in eye-rest colors and by using colors on machinery that differentiate working from stationary parts, according to COLOR DYNAMICS, we have relieved eye strain and reduced physical fatigue. An appreciable part of the reduction in re-work and scrap can be attributed to this improvement of our operators' environment.

"**Safety, too,** has been improved. Our recent record of 411 working days without a lost-time accident gained for us an Award of Merit from the National Safety Council. This improvement in productive efficiency and safety has enhanced morale, creating friendlier relationship and greater cooperation among the members of our organization."

Let Us Make an Engineered Color Study of Your Plant—FREE!

Why not investigate what COLOR DYNAMICS will do in r plant? Send for our free book which explains this painting tem and how to use it. Better still, call your nearest Pittsburgh e Glass Company branch and ask to have a representative e you a comprehensive engineered color study of your nt—without cost or obligation. Or mail coupon at right!

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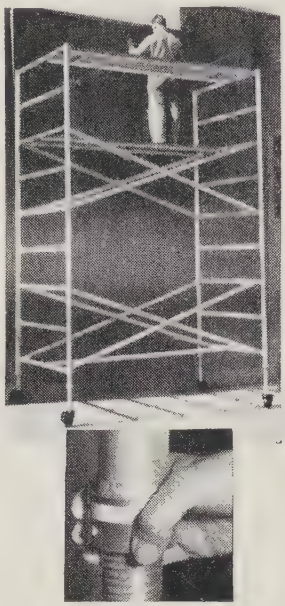
ALUMINUM SCAFFOLDS . . . by The Patent Scaffolding Co.

NEW 4′6″-WIDE LADDER SCAFFOLD



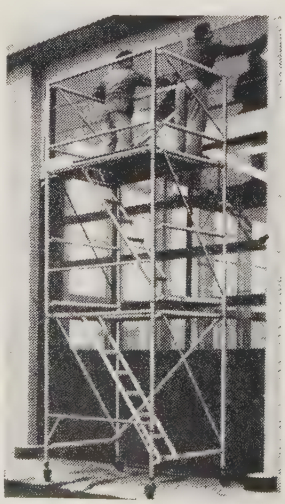
This 4′6″-wide aluminum ladder scaffold provides added stability and extra working room for painting, cleaning, relamping and general maintenance jobs. Lightweight, aluminum components are easy to erect. Base section is 6′ high. Other heights are achieved by combining other ladder units of 4′ and 5′4″, and using 24″ leg adjustment (Inset). Leg adjustment (on all three Scaffolds) is built in and gives safe, positive height adjustment without lifting scaffold. Diagonal braces give 6′, 8′ or 10′ spans. Smooth-rolling rubber-tired casters. Use inquiry card or write The Patent Scaffolding Co., Inc., 38-21 12th St., Long Island City 1, N. Y., Dept. SM&P.

2′-WIDE LADDER SCAFFOLD

Has same features as 4′6″-wide scaffold, but is 2′ wide. Ideal for maintenance work in narrow hallways and aisles. Rolls right through standard 30″ doorway. Can be used with diagonal braces to give spans of 6′, 8′ or 10′ platform. Compact—parts lie flat and take up little room. Use inquiry card or write The Patent Scaffolding Co., 38-21 12th St., Long Island City 1, N. Y., Dept. SM&P.

SCAFFOLD OPENS LIKE A BOOK

One man can erect the base section of the "Fold-A-Way"* scaffold in less than a minute. End frames swing open sideways, while the base section is in a standing position, making an easily managed swing of about 90°. Adding additional 6′ sections takes just a few minutes. Basic unit is 4′6″ x 6′ and is 7′ high including rubber-tired casters. Ball bearing extension legs permit height adjustment up to 24″. Approved by Underwriters Laboratories, Inc. For more information on the "Fold-A-Way" Scaffold use inquiry card or write The Patent Scaffolding Co., Inc., 38-21 12th St., Long Island City 1, N. Y., Dept. SM&P.



(*Trade Mark)

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LONG RUGGED WEAR
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14 IRON BLACK or BROWN
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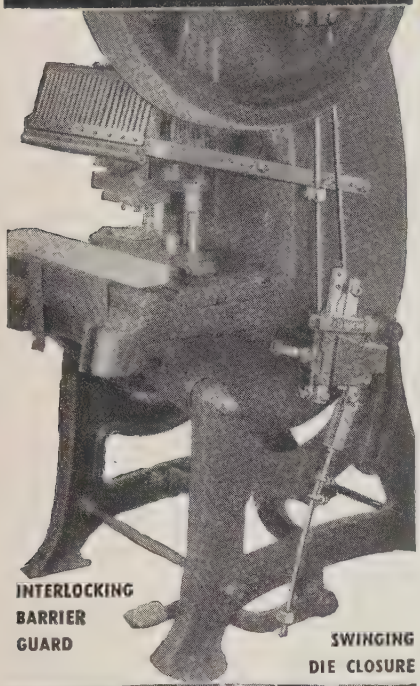
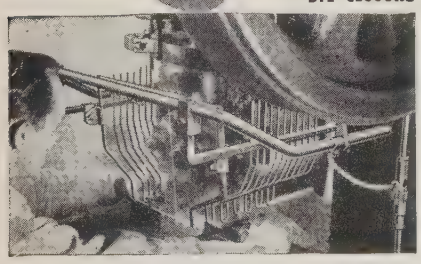
(For details, use Key # C-6 on card on page 75)

JUNKIN
SAFETY GUARDS





Your SUREST Protection Against Press Accidents

JUNKIN safety guards prevent press accidents, afford maximum protection, increase press production, lower insurance costs and generally improve plant morale. Make an investment in safety now and investigate Junkin Safety Guards for primary and secondary punch press operations. Write for free catalog "The Key to Protection".

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ENGINEERED SAFETY
SAFETY APPLIANCE CO.
101 S. FLOYD ST.
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(Use Key # C-7 on Inquiry Card on page 75)

THE Future SHOWS

Philadelphia, Pa. *March 8–9*

Twenty-first Annual Philadelphia Regional Safety and Fire Conference and Exhibit (Broadwood Hotel). Walter W. Matthews, Managing Director, Philadelphia Safety Council, 17th & Sansom Streets, Philadelphia 3, Pa.

Boston, Mass. *March 21–22*

Thirty-fourth Annual Massachusetts Safety Conference (Hotel Statler). Bert Harmon, Activities Director, Massachusetts Safety Council, 31 State St., Boston 9, Mass.

Houston, Texas *March 21–22*

Sixteenth Annual Texas Safety Conference (Rice Hotel). J. O. Musick, General Manager, Texas Safety Association, Inc., 830 Littlefield Bldg., Austin, Texas.

Pittsburgh, Pa. *March 29–31*

Thirtieth Annual Western Pennsylvania Safety Engineering Conference & Exhibit (Hotel William Penn). H. H. Brainerd, exec. manager, 605 Park Bldg., Pittsburgh 22, Pa.

Indianapolis, Ind. *March 30–31*

Eighth Central Indiana Safety Conference & Exhibit (Claypool Hotel). Indianapolis Safety Council, 320 N. Meridian St., Indianapolis, Ind.

Kansas City, Mo. *March 31–April 1*

Central States Safety Congress (Municipal Auditorium). George M. Burns, Director, Kansas City Safety Council, 419 Dwight Bldg., Kansas City 6, Mo.

New York, N. Y. *April 11–15*

Twenty-fifth Annual Greater New York Safety & Exposition (Hotel Statler). Harold C. Mesch, general chairman, Greater New York Safety Council, Inc., 60 E. 42nd St., New York 17, N. Y.

Niagara Falls, N. Y. *April 19–21*

Fifteenth Annual Western New York Safety Conference, in cooperation with the American Society of Safety Engineers (Niagara Hotel). Patsy E. Gismondi, Executive Secretary, 1436 Delaware Ave., Buffalo 9, N. Y.

Cleveland, Ohio *April 26–28*

Twenty-fifth Annual All Ohio Safety Congress & Exhibit (Hotels Cleveland and Hollenden). A. W. Moon, Congress Manager, Industrial Commission of Ohio, Safety & Hygiene Div., Columbus 15, Ohio.

Grand Rapids, Mich. *April 26–28*

Twenty-fifth Annual Michigan Safety Conference (Pantlind Hotel and Civic Auditorium). R. H. Goring, Executive Secretary, Michigan Bell Telephone Co., Detroit, Mich.

Chicago, Ill. *May 1–3*

Greater Chicago Safety Conference & Exposition (Sherman Hotel). Greater Chicago Safety Council, 10 N. Clark St., Chicago 2, Ill.

Syracuse, N. Y. *May 16–18*

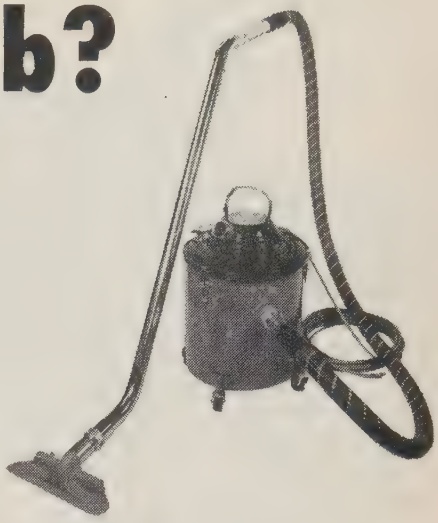
Central New York Safety Conference & Exposition (Hotel Syracuse & Hotel Onondaga). Walter L. Fox, Manager, Safety Division, Syracuse Chamber of Commerce, 351 S. Warren St., Syracuse 2, N. Y.

Chicago, Ill. *May 16–20*

Eighth National Materials Handling Exposition & Conference (International Amphitheatre). Clapp & Poliak, Inc., exposition management, 341 Madison Ave., New York 17, N. Y.

Which is the best Vac for YOUR job?

• Multi-Clean industrial vacuum cleaners are portable, high performance units that will meet your every cleaning need. They are sold under the famous Multi-Clean guarantee which is your assurance of complete satisfaction.



THE MULTI-CLEAN MCV-214

The finest 10 gallon capacity, heavy-duty vacuum cleaner on the market. Powerful . . . quiet . . . versatile . . . rugged . . . safe. For wet or dry pickup. Includes attachments for both floor and upholstery cleaning. U/L and CSA approved.

THE MULTI-CLEAN D-100

This 29 lb. easy-to-carry, wet or dry pickup vacuum cleaner is just the thing for smaller jobs, where easy portability is important. Holds 3½ gallon wet or ½ bushel dry material. Despite low cost, an outstanding performer. U/L and CSA approved.

THE MULTI-CLEAN E-200

Medium-priced, all-purpose vacuum cleaner is recommended for medium-size wet or dry pickup jobs in your place of business. Tank holds 10 gallons wet or 1¼ bushels dry. The E-200 will give years of trouble-free service. U/L and CSA approved.

THE MULTI-CLEAN F-300 VAC-BLOWER

Combination vacuum cleaner and blower. 16-lb. head and dust bag are detachable for vacuuming and blowing in cramped quarters. Excellent for blowing dust from otherwise inaccessible locations. Tank capacity: 10 gallons, U/L and CSA approved.

MULTI-CLEAN PRODUCTS, INC. Dept. SMP-35
2277 Ford Parkway, St. Paul 1, Minnesota

Gentlemen: I'd like floor maintenance information on: ☐Concrete, ☐Asphalt Tile, ☐Terrazzo, ☐Wood, or_____. Also literature on: ☐Floor Machine, ☐Scrubbing Machine, ☐Industrial Vacuum Cleaner.

Name_____ Title_____

_____

Address_____

City_____ Zone___ State_____

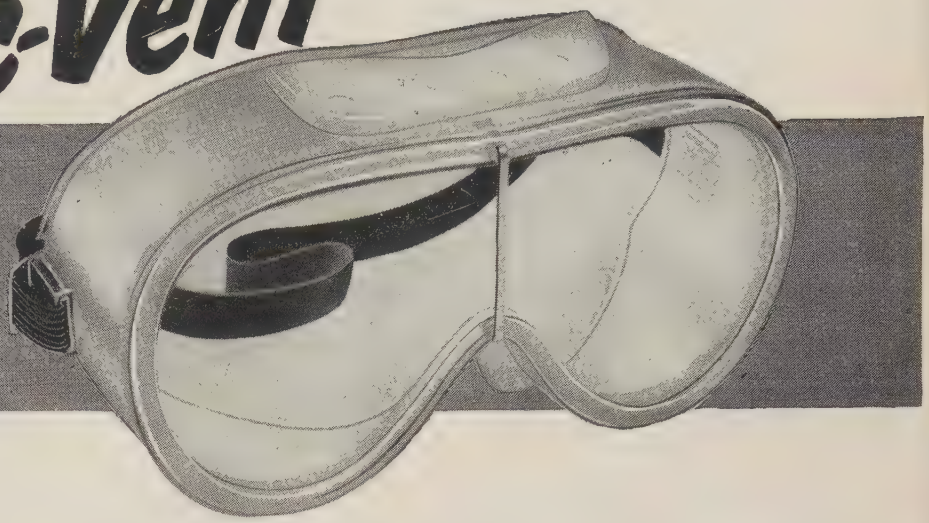
(For details, use Key # C-8 on card on page 75)

New! Stac-Vent

Stops Liquid Splash
Greater Safety
More Comfort

SOFT VINYL FRAME SAFETY GOGGLE

Model 4405V
Methacrylate Lens
Model 4415V
Acetate Lens



WATCHEMOKET STAC-VENT eye SAVERS

. . . a new principle in goggle ventilation

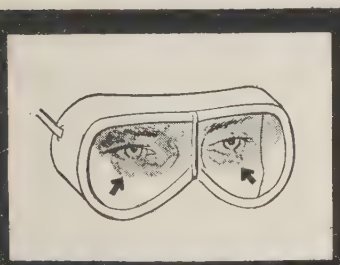
Greater safety . . . No liquid, chemical or other hazard can reach the eye. Ventilation holes are protected under the "Stac-Vent" hood located properly to eliminate lens fogging. Methacrylate or Acetate Lenses and Vinyl frame protect against all hazards: impact, chemical splash, sparks, molten metal.

Safe Ventilation . . . "Stac-Vent" provides draft ventilation at the top and center of the goggle (where warm, moist air normally accumulates). Large openings for ventilation are possible because they are safely shielded by the "hood".

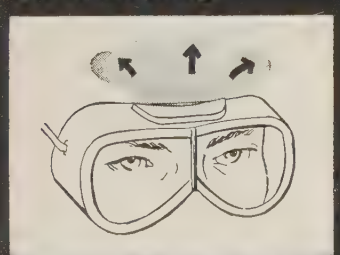
More comfort . . . Soft Vinyl Frame form-fits the face. Goggles are lightweight . . . hug the face without pressure, thanks to soft edge fins which yield to the contours of the nose and face.

Choice of Frames and Lenses . . . Soft Vinyl Frames are available in clear, transparent green or opaque black with STAC-VENT, Regular (Holes) or Screen Ventilation; also no ventilation.
Furnished with clear, light, medium or dark green Methacrylate Lens for heavy impact.
Furnished with clear or medium green Acetate Lens for light impact.

Here's How It Works



Moist air accumulates at top inside of goggle causing inside of lens to fog.



STAC-VENT drafts off hot, moist air from inside goggle just as a chimney carries off smoke.

PLUS ALL THESE FEATURES

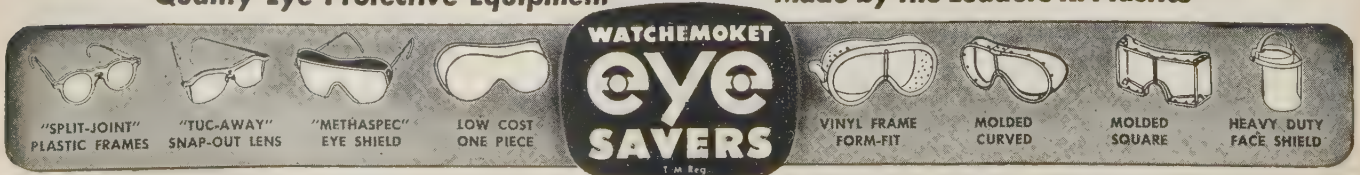
Fits over all prescription glasses . . . Extra wide 6" lens and large frame fits over all prescription glasses — metal or horn-rimmed. Soft Vinyl Frame is translucent (except opaque black) for partial side vision. Front of frame protrudes to act as bumper, protecting the lens surface when thrown on table or floor.

Optically correct, shatterproof lenses . . . Eye Savers Methacrylate and Acetate Lenses are guaranteed optically correct. Cannot cause image distortion with resultant permanent injury to the eyes. They are shatterproof — cannot splinter with impact.

Lenses are easily replaceable . . . no special tools or skill is required to replace lenses. Positive Lens Lock Bar is easily removed . . . new lens inserted (soft vinyl frame spreads at finger touch) . . . new Lens Lock Bar (supplied with each replacement lens) is put in place.

See Your Authorized Eye Savers Supplier, or write direct for full Information on the new "Stac-Vent" and other modern Eye Savers

Quality Eye Protective Equipment ***Made by the Leaders in Plastics***



WATCHEMOKET OPTICAL CO., INC.

238 West Exchange St., PROVIDENCE 3, R. I.
In Canada: Levitt-Safety Limited, Toronto 10, Montreal 26
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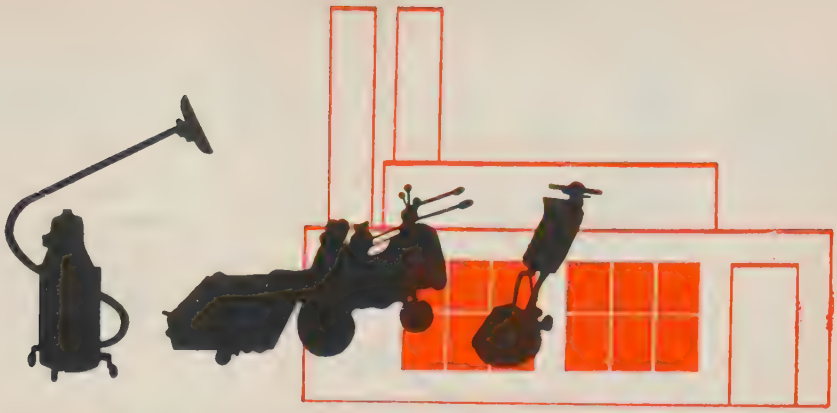


6th plant maintenance & engineering show

TWENTY-FIVE THOUSAND plus visitors filed through the newly-built addition to Chicago's International Amphitheater late this January to inspect the more than 9 thousand products, valued at 4 million dollars, shown at the 6th Plant Maintenance and Engineering Show. For four days, from noon till six and sometimes till ten at night, the record crowd from all over the country and 15 foreign countries attended sessions and exhibits devoted to reducing the vast, multi-billion dollar annual cost of factory upkeep, and to paving the way for the automatic, push-button factory of the future when maintenance of the machines will be the biggest production problem. *(Cont'd on p. 16)*

WHAT'S YOUR BIG IDEA?

WE ASKED OUR . . . AND THEIR ANSWERS HELPED US!

By DONALD W. FOUSE
Division Industrial Engineer
Thompson Products, Inc.
Cleveland, Ohio

LIKE MANY OTHER suggestion plans ours was a war baby, born of the necessities of an all-out production effort. Like many other industries, our company had a sudden drop in operations at the end of World War II. At that point, our management decided to replace the war-born suggestion plan with a very informal arrangement which would award suggestors, but not make an issue of a suggestion system as such. This type of operation continued throughout our many plants scattered over the country until early in 1953. At that time I was assigned to prepare a suggestion plan for the company's 22,000 employees, for the approval of top management.

How did all this come about? It was the result of 3 forces. Our top officers recognized the need for a formal plan; our independent union pushed from their side; and we never ended our pressure from the operating staff. All 3 forces met at once and the suggestion plan was conceived.

We tried it out first in our Cleveland area operations. The management of these operations made changes they felt were necessary in our first draft and submitted it to the company heads. After their approval we began the build-up phase. Included in this phase were printing the master policy, writing and printing the employees booklet, suggestion form, orientation material for supervisors, orienting our union officials with the plant, arranging material for release in our company house organ, buying and planning installation of suggestion boxes, setting up an administrative plan for paper work, and scheduling the mailing of booklets and blanks to employees' homes. The last named was the final step and we were off and running. We have been doing a land office business ever since.

The pattern that developed from the way people participated in our plan was typical of most new plans. The initial phase found us swamped with ideas for improvement. At the end of about 3 months we reached our peak. Then the participation leveled off roughly to an average of 300 suggestions per month.

The organization of the plan was decentralized as much as possible in order to get as complete understanding as possible of the idea and to give benefiting divisions as great an opportunity as we can to exploit potential gains. Divisional committees are therefore the central skeleton of our organizational structure. To handle our volume of suggestions we use the investigator type of operation. Each suggestion is picked up by the suggestion secretary, screened for originality, acknowledged, and forwarded to the division affected for investigation and control by

In submitting your suggestion, please see that all information requested on the other side of this sheet is given. State your idea as clearly as possible and your reason for thinking it should be adopted. Be sure you SIGN YOUR NAME!

Ask yourself these questions about your idea; they can probably improve the QUALITY of your suggestion.

1. WHY should the change be made?
2. WHAT is necessary to make the change?
3. WHERE will it apply?
4. WHEN should the change be made?
5. WHO will be affected by the change?
6. HOW is the best way to do it? Submit sketches, diagrams, and other illustrative material, if necessary.

EMPLOYEES . . .

methods engineers. If the suggestion goes beyond this stage the method engineers check with the originator and investigate the particular layout. The suggestion is then returned to the secretary for committee action. Then a final letter with a check or the reason for declining the suggestion is mailed.

All this entails a great deal of work and expense for the company. What have we gained for this effort? One very tangible item received was the equivalent of 2 standard boxes of aspirin tablets in the suggestion secretary's office. Each day for the first 4 weeks in one particular box we received an aspirin tablet. Apparently some kind-hearted soul realized we were having our problems keeping up with the onslaught of ideas and decided we needed a mild sedative. He asked for no award; just performed a kind humanitarian act. Conversely, we received about 10 "Drop Dead" suggestions. Considering that we received well over 25 hundred suggestions in the first 10 months, we don't think the ratio is so bad.

Here is what we have really gained:

1. We have set up a means for our employees to communicate with management for improving operations.

2. We have made possible the recognition of employees as individuals.

3. Our employees feel they are an active part of the company.

(Continued on page 20)

WE SAID TO THEM . . .

HERE'S WHAT WILL HAPPEN TO YOUR SUGGESTION

1 From the deposit box, your idea goes to the Suggestion Secretary who dates it to fix the time when it was received, and it is then checked for originality. You will be notified promptly of the receipt of your suggestion.

2 Next, your suggestion is titled, indexed, and sent to your Division Industrial Engineer. He checks it and assigns a Methods Engineer to investigate your idea.

3 The Methods Engineer contacts you to discuss your suggestion; possibly you can explain it to him a little better when you both talk it over.

4 The reports of the Methods Engineer and the Division Industrial Engineer are next sent to the Secretary who presents your "idea file" to the Suggestion Committee for their decision.

Now comes the waiting period! Some suggestions require only minor changes in present procedure . . . these can be put into practice quickly . . . and you get paid quickly. Other suggestions require management decisions and purchase of new tools or machines . . . it may take weeks, months, even a year or so to put these into practice. And, *your pay-off* naturally is slower coming. But don't get discouraged! Things are moving! You are notified that the Committee has accepted your idea and one day . . .

5

YOU WIN FAME, CASH, AND the satisfaction of doing something over and above your specified job duties.

But...you can't expect to win *every* time! If your suggestion is turned down, just resolve to turn another one in . . . and another one . . . and another. The more good ideas you turn in . . . the sooner you'll hit the jackpot.

Who says sa

In any industry in which no thought has been given to safety, the accident rate is usually high. When a safety engineer begins to apply normal, common sense safety rules we see a decrease in the accident rate. The safety engineer, through job and accident analysis and other constructive effort, reduces the accident rate until he reaches what we term, "an irreducible minimum," a plateau below which further safety work seems to have no effect.

It is at this level that the industrial medical man comes into being. The accidents that occur below this plateau of irreducible minimum are caused by elements in the individual worker over which the best safety man in the world has little or no control. Poor personal adjustment to the environment, lack of attention, poor health, chronic pain and discomfort are some of the worker factors that cannot be eliminated by safety devices. It is in this area that the industrial medical man, working closely with the safety director, can have the greatest immediate impact on safety records.

In our organization, Occupational Health Services, we are concerned chiefly with the problems of industrial medicine. In the course of this work we have developed what we feel is a new concept of medicine as applied to industry. We like to refer to this concept as "constructive medicine," as opposed to "preventive medicine."

The preventive medical man takes a normal, healthy patient and tries to prevent his becoming ill. The constructive medical man takes the same patient and tries to increase both his physical and mental capacity. Success in industrial medical work is exactly proportional to the degree or extent to which we maintain the mental and physical health of the average employee.

Foot Pain Prevalent

In our daily routine contacts with industrial workers we became aware of the prevalence of foot pain and disability among our employees. Further investigation and analysis of existing clinical records convinced us of the devastating effects this constant suffering inevitably has on the worker as an individual. To answer this drain on the worker's capacity we formulated a program of foot health that included a weekly clinic devoted entirely to foot care.

Perhaps the first fact that we verified was that foot disability, to a greater or lesser extent, is the common disease of civilization. ***We estimate conservatively that more than 50 percent of industrial workers have some type of foot disability.***

The chief aim of our foot health program is to increase general standards of foot health among all employees. In accomplishing this aim, certain other gains automatically occur:

1. ***Decreased accident rate***—The portion of accidents caused by lack of worker attention should definitely be reduced. A sore, aching foot is a distraction, and can be responsible for many accidents labelled as decreased worker attention.

2. ***Decreased absenteeism***—It is true that an entire day's work may be lost due to foot disability. This

By DR. GEORGE F. HOLT
Staff Chiropodist
Occupational Health Services
Asheville, North Carolina

ety shoes are protective?

program, however, is concerned primarily with fractional and indirect absenteeism. The worker who makes extra trips to the "coke" machine or the locker room is many times answering the demands of a tender corn rather than the demands of nature.

3. ***Decreased labor turnover***—The foot sufferer whose work requires standing hour after hour will sooner or later begin to associate his pain with his job. The next logical step is to change his job to fit his aching foot. Unless these employees are salvaged by proper foot care, there can be an expensive labor turnover.

4. ***Improved labor relations***—The foot sufferer who is given relief is a grateful patient. He is impressed with management's concern for what he considers his personal problem. This concern can be a factor in the improvement of labor relations.

5. ***Increased production and efficiency***—Industrial workers are more effective workers when their feet are comfortable.

In addition, a foot health program can have other aims and functions. The manifestation of systemic diseases can, and frequently does, first localize in the feet. A chiropodist can assist in the early identification of these diseases. Control and treatment through the particular medical channels can thus be instituted earlier.

A foot health program can also help wise personnel placement. Foot conditions which limit the work of an individual can be called to the attention of the personnel section, so that each employee can be intelligently placed and used at his maximum capacity.

Each employee passing through a foot health clinic is encouraged to visit the safety shoe department. A program of foot health can thus be a helpful impetus to a safety shoe program.

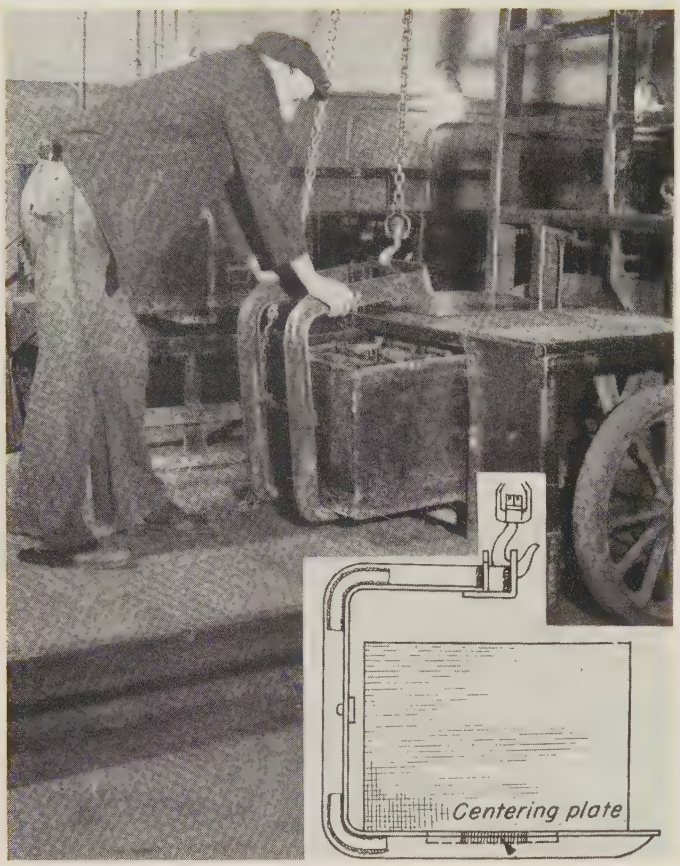
Where Do Safety Shoes Come In?

Specifically, what makes a safety shoe, and what should you look for in a safety shoe or in any shoe? The shank of the shoe is a piece of metal or other rigid material that runs from the ball area of the sole back into the heel. This supportive device should be absolutely rigid and have no give to it. The ball area is the widest part of the shoe; and the great toe joint should rest here when you are bearing weight. In discussing the length of any shoe you are talking in terms of heel to ball length, not heel to toe length. The waist of the shoe is the part of the upper which contains lace eyelets. The toe box is that area of your shoe which houses your toes.

In fitting shoes, the initial size may be measured by any of the foot measuring devices available; but the final fitting must be done with the fingers while the wearer is standing. We feel so strongly about this aspect of shoe fitting, that we do it while the wearer is holding an 80-pound load in two sand buckets. The widest portion of the foot (the ball) must fall into the widest part of the shoe. While the wearer bears weight the fitter must be able to pinch up a little excess leather on

(Continued on page 39)

"Safety Maintenance" Salutes A SAFETY IDEA



Handy Hook Cuts Battery Change Time

AN INGENIOUS storage battery lifting device to quicken battery changes in baggage trucks is now being used at New York City's Grand Central Terminal. In Grand Central more than 100 battery-powered trucks must be kept on the job 24 hours a day, 7 days a week to handle mail, baggage and newspapers. Not more than 3 minutes per truck is allowed for changing batteries.

The rig adopted is particularly handy where batteries must be removed horizontally and when both end and top clearance in the compartment is tight.

The pick-up element of the lifting device is a large steel yoke-hook welded from simple structural shapes and carried by a monorail hoist. When removing a battery from its compartment in a baggage carrier, the bottom of the yoke-hook is slid into the compartment under the battery. A rectangular centering plate on the bottom of the battery fits into a recess in the plate welded between the two arms of the yoke-hook, and acts as a safety device to prevent the battery from shifting.

After positioning the rig, the battery is lifted slightly by the hoist, moved horizontally out of the compartment and transported on the monorail to the charging racks. Because of the large number of trucks, battery changing is staggered. Not more than 2 trucks are in the battery room at a time. Each truck battery changed every other day.

Picture by courtesy of Gould-National Batteries, Inc.

Plant Maintenance Show

(Continued from page 11)

The Size of Maintenance

Factory upkeep in manufacturing industries cost 10 and one-quarter billion dollars during 1954, L. C. Morrow, general chairman of the Plant Maintenance and Engineering Show, told the show's opening session.

Mr. Morrow, who called his multi-billion dollar figure "conservative," said the total estimate was based on a study of plants all over the country. He said that a general average of all industries showed at least *one in every 12 employees in manufacturing plants was concerned solely with upkeep.*

Maintenance employees, who number about 1 and one-third million, have total earnings of about 5 and one-half billion dollars, Mr. Morrow said. An additional 4 and three-quarters billion is spent for materials and equipment, according to Mr. Morrow. He declared that the next big advances in maintenance will consist of placing the work on regular schedules, of standardizing work routines and in cost controls.

And Its Future

Factories are getting so automatic and the costs of keeping buildings in repair are rocketing so high that the factory of tomorrow may be out of doors.

That's what W. E. Chandler, plant engineer, Monsanto Chemical Corp., St. Louis, told engineers at the show. The best way to cut the repair cost is not to build a building, according to Mr. Chandler. "The petroleum industry has been a pioneer in this field. The chemical industry is moving in that direction."

Where the whole plant cannot be dispensed with, Mr. Chandler suggested such things as windows and doors be eliminated by the architect. These cost money to keep up and windows may not be needed in an air conditioned plant. As for paint-

ing the outside, another costly item, Mr. Chandler said glazed tile would eliminate the need for the painters.

"Building maintenance represents an estimated 10 percent of plant maintenance costs. Therefore, it lends itself to long range planning and program development," he added.

And Present Problems

The concept of preventive maintenance to avoid breakdowns rather than a program of repairs only in emergency cases has been so well told to American companies in the last 5 years that the time has arrived for a new approach, Herbert N. Johnston, plant engineer, Philco Corp., asserted.

He asked for a program of "balance maintenance" which would be preventive in part and corrective in part. He said that such cost factors as production down-time, physical depreciation, and fire and safety hazards should be balanced against high maintenance cost to determine how much should be spent on a balanced program.

A plea that maintenance be recognized as part of the "industrial team" alongside other important departments of a company was voiced by David J. Godschall, plant engineer, Heintz Manufacturing Co.

"Your sales department requires a well-engineered product for successful sales. Your production department requires an ingeniously engineered process for maximum, economical production. This engineering is always supplied. For the same, obvious reason, maintenance people want good maintenance engineering applied to their operation," Mr. Godschall said.

Plant engineers should encourage, rather than fight, good accounting procedures for their department, R. E. Stroppel, plant engineer, Tool Gear and Pinion Co., declared. "Most plant engineers stand in absolute awe of the complicated operations of accounting departments. This is the reverse view that I take. Everything pertaining to plant maintenance has its beginning in the plant maintenance department. It becomes clear that, if we are to be accountable for everything we do, then we must set up an accounting system we can understand to help us do a better job," Mr. Stroppel said.

And Solutions

Precision in maintenance methods is replacing haphazard emergency operation, O. W. Graveley, director of maintenance, U. S. Department of Defense, reported. "More attention is being paid of late to the use of punched cards systems as a means of providing rapid and effective methods of recording, analyzing and reporting maintenance activities," Mr. Graveley declared. The information, he said, can be used for personnel requirements, budget preparation, and projecting future work loads.

S. C. Read, director of construction and maintenance, Jones and Laughlin Steel Corp., said mechanization of maintenance functions is being speeded in the steel industry. "Recently, the demand for steel has not been of the volume to maintain production at the top rate, and plant maintenance people are being required not only to improve maintenance performance, but also to reduce costs," he said. "The pattern and function of maintenance organizations at many steel mills have been studied in the light of modern management principles."

New fire fighting techniques are needed in modern factories, H. B. Duffus, accident prevention administrator, told the Show's visitors. "As our manufacturing buildings become longer and wider, increasing the manufacturing area under one roof, we must reappraise very carefully our plant fire defense system. The several mediums used to get equipment to a fire must be evaluated in the light of distances to fire hydrants, obstructions caused by long conveyor lines and extended work stations. Wheeled hose reels, located inside the building, are replacing the hose house in many large area buildings. The small compact fire truck that can speed equipment down the manufacturing aisle has many advantages over the larger, conventional fire truck," he said.

CALL THE SANITOR!

UNDERTAKERS are called morticians, chorus girls want to be known as chorines, and press agents are termed public relations counsellors. Now it's the janitor's turn.

Sanitation engineers at the Plant Maintenance & Engineering Show in Chicago, anxious to improve the morale of the men who sweep the floors and scrub the walls, have come up with the name "sanitor" for the man who keeps the factory tidy.

And People

Personality characteristics of the factory maintenance crew are as important as craftsmanship, maintained L. E. Clover, manager, plant engineering and maintenance services, General Electric Realty Corp. In a session devoted to the human relations of maintenance, Mr. Clover pointed out that unlike production workers, the maintenance men are frequently on their own and sometimes must make decisions which disagree with those of production supervisors.

"When the maintenance man incurs the displeasure of a production supervisor, he must have the moral integrity and intestinal fortitude to make a complete report for management's decision. Maintenance men frequently must work with outsiders. Furthermore, maintenance mechanics are observed directly by top brass and visiting dignitaries during emergency breakdowns or plant inspection tours. The impressions left with such folks will depend upon the personal quality of the maintenance man," Mr. Clover said.

Robert E. Horstman, factory manager, Robbins & Myers, Inc., urged maintenance men to be more cheerful and polite in order to maintain good worker morale in factories. He said the maintenance crew must be particularly aware of "factory gripes."

"Let's suppose a maintenance man is checking a complaint and his first remark is, 'What's eating

you guys?' or suppose his opening line is, 'What can I do for you?' If you were the worker, which remark would be better for your morale?"

Getting the highest production from a skilled maintenance worker requires a different approach than that used for a worker on a production line, declared Richard S. Grant, plant engineer, Owens-Corning-Fiberglas Corp.

"The motivation of craftsmen differs from that of production workers. The craftsman prides himself in knowing how to do a job and resents a foreman telling him in detail just how a job should be done. In order to get work output from his men, the foreman should show confidence in the craftsman by assigning a job and leaving the details to him.

Thomas D. McMahon, director, labor relations division, National Biscuit Co., New York, felt that it is essential to have supervisory personnel well informed on the basic provisions of a labor contract if the company is to get along with unions.

"I do not mean that all your supervision, particularly the lower echelon, has to know every word of your labor agreement. However, they should be informed on the things that come up every day, like seniority, distribution of overtime and union jurisdiction," Mr. McMahon said.

And New Equipment

The phrase, "like working in a boiler factory," may soon lose its meaning if a noise deadening device on display at the show is adopted by factories.

The noise deadeners are box-like objects about 2 feet long and are intended for factories where high, irregular ceilings make it impossible to use ordinary acoustical insulation. The boxes may be grouped in clusters to deaden the sound over a particularly noisy spot.

Another type of insulation, for steam or hot water pipes, is made easier by another development. Instead of the conventional method of wrapping insulation around pipes and then strapping it down, one company is showing insulation which can be sprayed on. The substance foams up to 20 times its original thickness and prevents heat from leaking.

Still another innovation is an industrial development of the Chinese finger puzzle, in which the fingers are tied together by a web-like device becoming tighter the harder the fingers try to escape. The same principle is being used to tie hoselines together. Instead of clamps, the hoses are connected simply by pushing them together.

Telephones are going fancy in factories, too. They are being manufactured in different colors. This development has not come about because factory bosses are growing soft. The different colors are used to reach maintenance crews when emergencies come up, to report a fire, and for similar purposes, each with a differently colored telephone.

Another protection against fires just developed is a fire engine, completely equipped with hooks, ladders, fire hose, water pumps, and fire-smothering smog, which is so small it can race up factory aisles. Built on a 72-inch wheel base, it can turn in small areas and put out a dangerous fire which could wipe out a plant before the usual equipment reached the spot.

Looking toward the day when factories become completely automatic, another exhibitor displayed a device which recognizes when a motor is vibrating too rapidly. The device shuts the motor off and rings a loud alarm to call the repair man. The same company showed a new type of electrical insulation which uses plastics to prevent motors from burning out. The new material is said to make motors last 50 percent longer.

A new type of flooring was also on display. This wood is said to be stronger than concrete. Its strength lies in the fact that the grain of the wood is used edge-wise instead of cross-wise, as is customary in most floors. This wood is also being tested for the floors and walls of railway boxcars which must be able to take strong pounding.

For smaller institutions, and restaurants, a water heater manufacturer is showing a unit which delivers hot water at 2 different temperatures. Thus, water can be kept at 140 degrees for general cleaning and at 180 degrees for dishwashing, through a single heater.

The janitor of today no longer pushes a broom—he drives a 6-foot automobile around with brushes and vacuum pumps. A new wrinkle appeared at the show which can dry-scrub grease and oil off a factory floor without the use of water. Another company has a portable steam nozzle which not only cleans walls but dries them in 50 percent less time than conventional models.

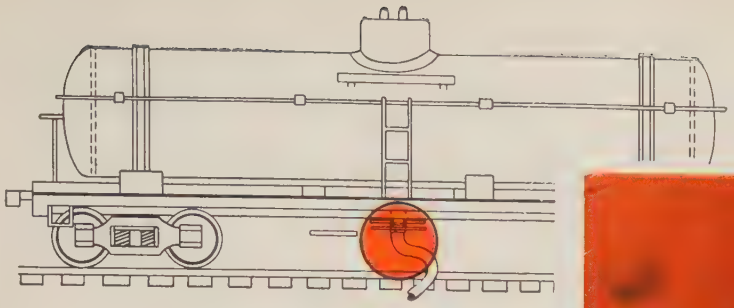
Paint manufacturers have come up with a number of improvements. One company showed a paint which peels off like pressure tape if the paint gets dirty or if it is carelessly painted on to the wrong spot. Others are showing color schemes which reduce worker fatigue and concentrate his attention to prevent accidents. Other paints, for outside masonry, have been developed to prevent water and wind damage even in hurricanes.

A new plastic window which also resists hurricanes was shown. In the display is a section of window which survived Hurricane Hazel while glass was blown to bits. In the display, a monkey wrench hits the window every 10 seconds without breaking the pane.

Another manufacturer exhibited a new check-out system for controlling tools and stores borrowed from the tool crib.

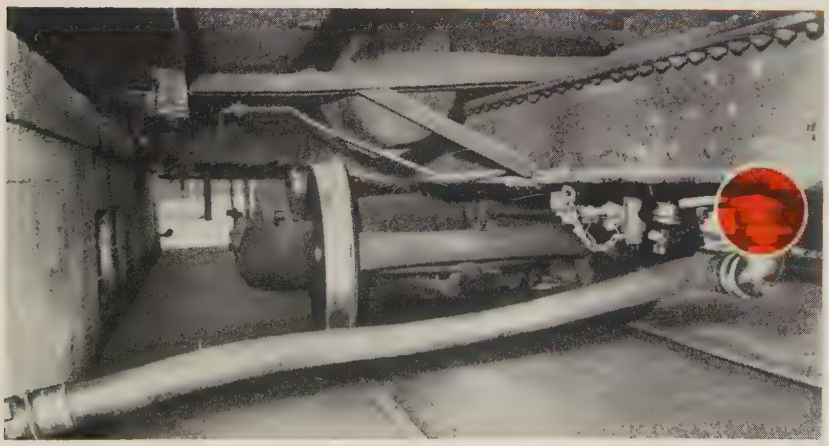
Many, many more interesting developments for better maintenance appeared at the show than there is room for us to list and describe here. Some of these developments have appeared recently in the columns of our *"What's New"* section and many are in the page 27 story this month. More will be published next month and in the future until we have covered all the advancements that filled this 6th Plant Maintenance and Engineering Show.

Picture by courtesy of Clapp & Poliak, Inc.



Discharge fitting on underside of tank car (left) is shown in close-up (below), with flexible hose quick-seal coupling detail.

TIGHTENING UP ON UNLOADING DANGERS



Flexible hose connects discharge fitting from tank car and tank inlet on building in picture at left. Quick-seal couplings on both ends of hose permit rapid connection and prevent oil leakage.

A WAY TO CUT DOWN the labor and increase the safety of an operation common in many industries—the unloading of tank cars—has been found at U. S. Steel's Homestead Works. Largely responsible for this advance in tank car unloading is a unique hose coupling.

One of the largest steel mills in the world, the Homestead Works requires lubrication oil in tank car lots. This oil is delivered by running the tank car alongside the maintenance stores building and unloading the car into storage tanks in the basement. This has required connecting a flexible hose from the discharge fitting underneath the car to the inlet fitting in the building wall.

The Homestead Works originally followed the standard practice in tank car unloading—that is, connecting the flexible hose to the tank car by a threaded coupling. This meant using a large wrench in the restricted space below the tank car. Coupling the connecting hose to the tank car was always a laborious job that often took 2 men half an hour. Also, since the sealing action in the threaded coupling is produced by two flat, metal surfaces in tight contact, the threaded coupling had to be screwed on extremely tight. Otherwise, oil leaking from it made the

space near the building very slippery and presented a serious safety hazard.

By replacing the threaded coupling with a quick-seal coupling the time for this hose-to-tank car connection was reduced to a few minutes. Even more important, safety was increased, because the new coupling eliminated leakage at the hose-to-tank car connection.

The labor saving and leak-proof characteristics of the new coupling become clear from a glance at the photographs. When the nipple is inserted in the coupling and the collar released, the nipple end of the coupling sits solidly against the seal ring. The coupling becomes sealed the instant the coupling is fully closed. Also, when fluid pressure is in the line, the seal ring's lips are expanded and pushed against the facing ends of the coupling. This makes the seal tighter as pressure inside the line increases.

The collar arrangement in this coupling permits a full swiveling action. That is, neither end of the coupling has to be twisted to connect or disconnect the coupling. This absence of twisting enables one man to engage or disengage the coupling. The absence of twisting also prevents kinking—the action which generally starts hose failure.

These features of the quick seal coupling are taken advantage of at the Homestead installation. Because most tank cars are equipped with a permanent threaded discharge fitting, the Works uses a threaded quick-seal coupling nipple that can be screwed on to this fitting. By providing handles on this nipple, it can be screwed on without using a wrench, which can be done by one man instead of two as the threaded coupling required—one to hold the coupling, the other to operate the wrench.

The quick-seal coupling body, attached to the flexible discharge line by an elbow fitting, has handles attached to the collar so that it can be easily retracted. This permits slipping the coupling body over the nipple—an operation that takes only seconds and can be done by one man. The coupling collar is then released, locking the coupling ends together and completing a leak-proof connection from tank car to discharge line.

The change from the conventional threaded coupling to the quick-seal coupling for tank car unloading has eliminated this cramped half hour job for two men. Now one man can do it easily in several minutes. In the few years since it was installed the new coupling has effected an impressive time-saving in the job of connecting tank cars for unloading. By eliminating leakage, it has removed a safety and fire hazard from oil drippings at the unloading point.

Pictures by courtesy of Titeflex, Inc.

We Asked Our Employees

(Continued from page 13)

4. All of us get a tremendous boost in seeing our creative thinking put into operations.

5. We have added an employer-employee morale builder.

6. We have a powerful motivator in individual financial consideration.

From an economic point of view, we have saved or made more than 100 thousand dollars and will do even better in the future. These unspent dollars have been derived from many areas. We have reduced tool costs, eliminated many unnecessary operations, cut paper work cost and reduced safety hazards, just to mention a few things. I could go on and show many specific applications where economies have been brought about. In many instances these suggestions have not called for a grandiose re-arrangement of a plant layout, but we are keeping our operational stethoscopes tuned to pick up a murmur which can easily develop into a major change for improvement.

One point seems clear and unfortunately so. Each of us in our respective jobs sometimes become so engrossed with the trees that we fail to see the poison ivy growing around a dead stump. Who is in a better position to recognize these small annoying factors than the man on the job? He lives with his problems day in and day out. He knows his operations. Does it make sense to hire a man for his hands and in effect tell him to leave his head at home?

If you already have a suggestion plan or are contemplating installing one, may I offer one other suggestion. Remember a suggestor is not "some dumb cluck who doesn't know what's going on." While it is true that he may lack some of the specific details required to present a complete proposal, he may, if you will hear him out, have the very idea you are looking for. Turn the tables around when it comes to operating a machine and he may have the same thoughts about you: "some stupid engineer who has it all in his head and nothing in his hands." In other words, don't become such an expert you can't listen to someone else.

You can gain something else through an employees' suggestion plan. If the idea for improvement comes from the area affected and the idea can be used, one half of your problem is completed. You have a workable idea and the greatest retarder of progress is on the way to being overcome. I refer to resistance to change. It's an old story—"If it's your idea it might work, but I doubt it; if it's my idea I know it will work."

Why not capitalize on a natural means to a common end: Safer and more efficient operation through group participation with a minimum of resistance. Also, there is less fear in the minds of workers that some engineer is trying to eliminate jobs, if the original idea comes from the man affected.

There is a tremendous source of information waiting to be tapped if we but set up a mechanism to let information flow freely in both directions. Once this plan has been set up it must be maintained in proper order and fairly administered. While it is not the answer to all problems, an employees' suggestion plan is a step in the right direction. Everyone stands to gain through an exchange of ideas.

Drawings by courtesy of Thompson Products, Inc.

From an address delivered at the Packaging Materials Handling Short Course, Department of Mechanical Engineering, University of Illinois.

Learning . . . . . the hard way

IT'S HARD TO REALIZE . . .

. . . THAT MANY metals are poisonous if the fumes are inhaled or the dust swallowed. Included are such metals as arsenic, cobalt, cadmium, mercury, zinc, lead, chrome, and magnesium. Whenever a person is exposed to dust or fumes from metals his lungs should be protected with an airline respirator. Men in this type of work should observe the strictest sanitary rules in regard to personal cleanliness and frequent change of clothing.

In one case we know of, a repairman in a body shop was engaged in spraying molten lead and tin on a car body. After a few months of this type of work, he developed acute lead poisoning. He had inhaled a certain amount of the lead fumes and the fine metal spray had accumulated on his face, hands and clothing.

THE SOUND OF DEATH . . .

WE HAVE HEARD much recently about the workmen's compensation costs of noise. We have only occasionally heard about the fact that death can result from noise in industry. Not cumulatively, but suddenly.

Recently a workman in a machine shop was struck by a swinging load and killed. The crane operator had sounded his warning bell, but apparently the man had not heard. Ironically enough, the workman had complained the day before that he could not hear orders or even conversation very well because of the noise in the shop.

For maximum efficiency and safety, set noisy machinery on dampeners and cover solid flat walls and ceilings with sound-deadening material. In the top of an open shop hang baffles made of sound absorbents. When the number of noisy machines is not extensive, they can be isolated from the rest of the plant by installing them in sound proof rooms or booths. Square cut gears should be replaced with noiseless gears and all loose bearings tightened.

TILTING THE BALANCE . . .

A WORKER WAS placing a roller under a large, tall crate, which was being tilted on one end by a fork-lift truck. The crate, which weighed more than a ton, toppled over and crushed the worker to death. Each man in the operation had committed an unsafe act: the fork-truck driver by lifting one end of the crate instead of the whole crate; the worker by taking an unsafe position near the crate. Here was an unstable unwieldy package being moved by two men without the proper hoisting equipment.

What should management have done about it and what can be done now? Impress workers with the importance of following safe practices. Provide better materials-handling equipment for such packages. Standardize shape, size and weight distribution of parcels of freight.

THE WEIGHT LIFTER

A DELIVERY MAN recently sustained a serious back strain while lifting and carrying a quarter of beef from his truck to the market. Fortunately, in the meat packing industry much of this lifting has been eliminated by overhead monorails that can transfer beef from the truck monorails to the market monorails. Apparently this man was either showing off, or working without the proper tools. At any rate, he should have had someone else help him with the heavy load.

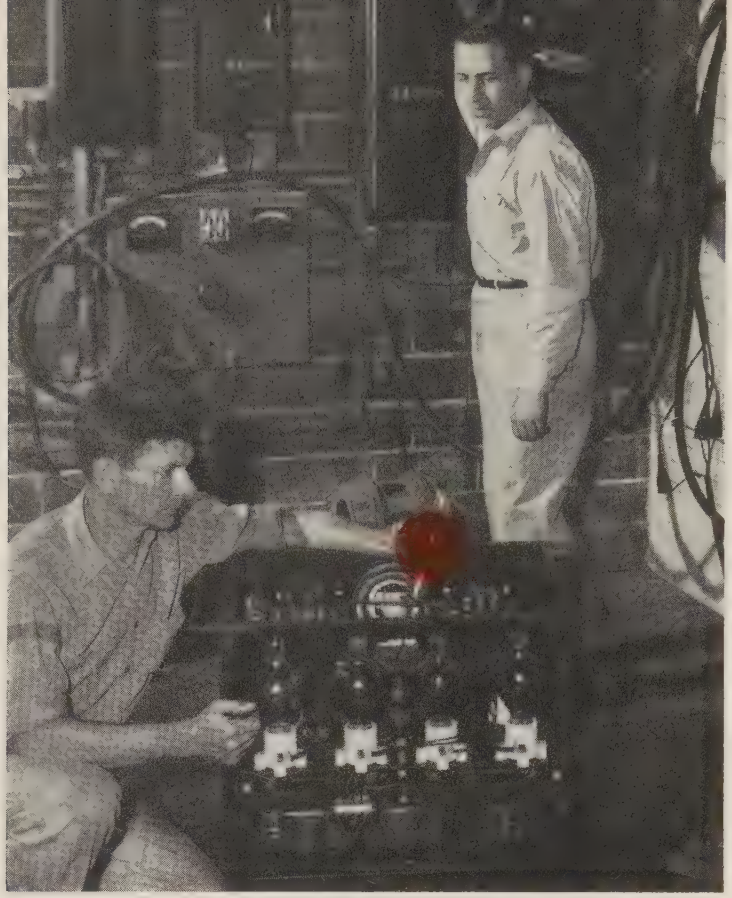
Like so many accidents this one applies to other industries as well. The best prevention of this sort of accident is proper tools and help, anywhere. The man who tries to manhandle more than he can easily do is asking for trouble, both for himself and his employers.

INSPECTION SAFETY? YES, IT'S NECESSARY TOO

RECENTLY TWO MEN, while cleaning the mud drum of a boiler were severely scalded, one of them seriously, when live steam rushed into the drum through an open blow off valve. This happened when a fireman attempted to blow down an adjacent connected boiler that was in service. Never enter a boiler until you are sure all valves are closed and locked. In addition a sign warning that men are working inside the boiler should be hung where it can be readily seen.

This boiler accident points up a safety hazard that is often forgotten. Any inspection is made with the possibility in mind that there may be a hazard present . . . else why the inspection? Since this is true the inspector should be doubly careful to protect himself against the very hazards for which he is inspecting.

Part II False Starts



By PAUL C. ZIEMKE

LIKE THE EXPLOSIVES engineer who wants no part of grounded power circuits to detonate his important underground blasts, lest the grounded current seek a shunt path around his detonators, so too the cautious electrician resorts to the use of a transformer to isolate his important control circuit from the normal power supply to his motors. With this transformer arrangement, faults in the supply current are not common to the control circuit. The change is not costly since a 25 VA transformer will readily energize the actuating coil for a size 0 magnetic starter.

In addition to being isolated from the line current, the reduced voltage of the transformer's output tends to develop less insulation failure in the face of adverse operating conditions. Accordingly, it renders longer troublefree service. For those circuits operating on 230 volts the best expedient is to install a 1 to 1 ratio transformer to achieve isolation. This saves the installation cost of a new magnetic switch coil which is a "must" with the step-down from the 460 volt line current and results in 115 volts for the secondary. With both conversion projects it's obviously necessary to change the magnetic switch coil and push button circuit to the secondary of the transformer.

Ground Detectors Prove Valuable

Modern practice often tends to ground feeder and distribution circuits. A grounded neutral affords greater safety, reduced maintenance and some times greater reliability of service.

The voltage from line to ground in ungrounded circuits is normal line voltage divided by 1.73. Yet a ground in an ungrounded circuit may produce voltage several times the line to ground value during switching operations or arc restriking. This overvoltage can readily damage valuable equipment through flashovers and resulting fires.

Maintenance men can usually define the location of grounds in an ungrounded circuit, although it often proves to be a long, tedious operation. An advantage with an ungrounded system is that you may select the time you wish to cut off the power to probe for the grounded spot. On a grounded circuit the power is automatically cut off when a ground occurs. And, while the search for the defective insulation may be short as compared to that of an ungrounded circuit, it may cause a power interruption at some inopportune time.

Furthermore, it is possible for two grounds in a grounded service to interrupt two services. Thus the choice of one system over another depends on how vital the service is and how soon you can trace a defect and get it repaired.

The National Electrical Code stipulates that the over-current device for electrical loads be located in the ungrounded conductors. For the engineer who is contemplating the grounding of one leg of his service this can mean a lot of work, especially if his installation involves a large array of motors. Each fuse must be replaced with a section of solid metal of comparable cross-section and securely sweated into place to develop a low resistance conductor. He may then also find a lot of care-

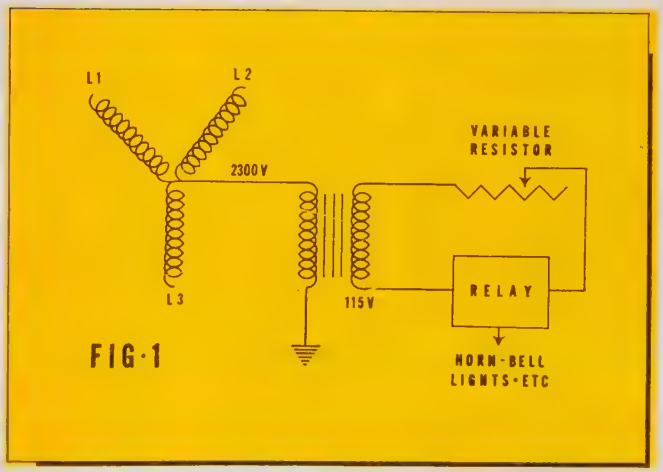
Electrical Grounds, and Accidents

less Joes using his neutral for case grounding; and, what is even more damaging, using the neutral as a negative return for arc welding operations.

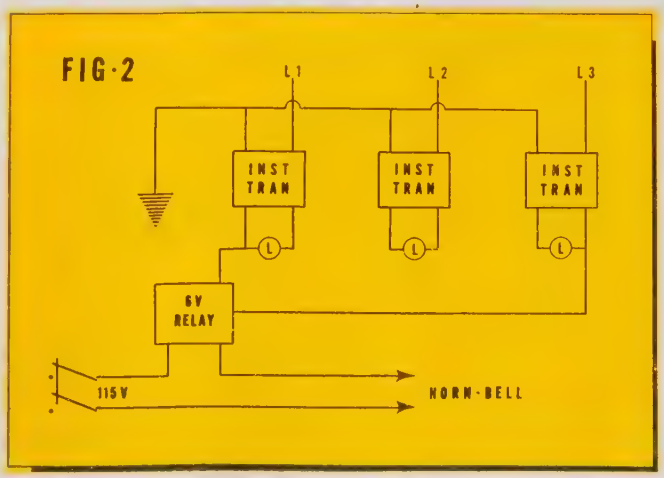
Vibration Troubles

A prolific cause of ground faults is building and equipment vibration. One plant experienced so much trouble they were forced to use the heroic device of pulling old rope in with the conductors to damp out the vibratory motion which beat the insulation off in a matter of weeks.

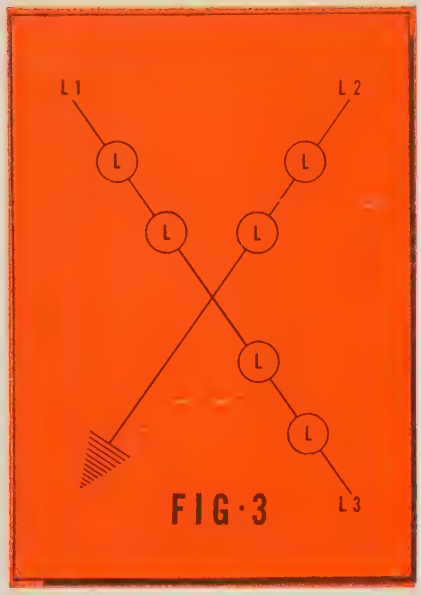
Packing the conduit, of course, was not the complete answer. The more realistic approach was the provision of larger, broader foundations for the crushers, ball and rod mills, plus shaker type slime tables. These new foundations were isolated from the plant's concrete floor by tar-treated felt strips; and, the smaller equipment, resting directly on the floor, was equipped with shock-absorber type mounts now available in numerous sizes and shapes. Refastening the entire conduit supporting structure along with the



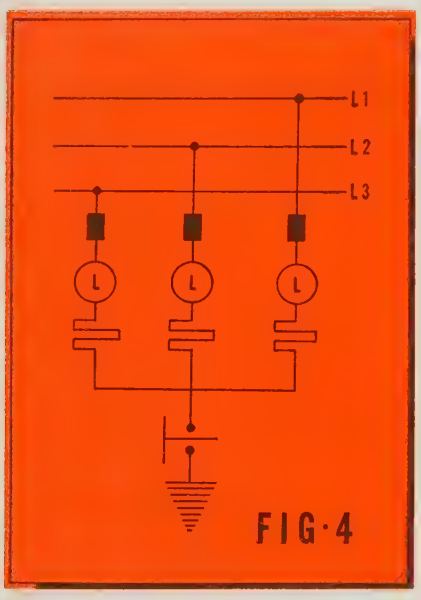
FIG·1



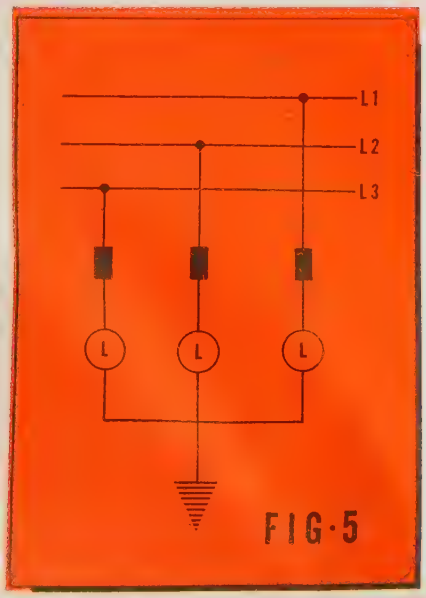
FIG·2



FIG·3



FIG·4



FIG·5

conduits completed the improvements.

That troublesome installation taught a hard lesson to the advocates of the grounded neutral system, since each time a short circuit to earth occurred the circuit had to be isolated for repairs until the fault was corrected. When an idled circuit served a process vital to the flow sheet, somebody sweated while the work was in progress. Conversion to an ungrounded system permitted leisurely repair work that was delayed to off-shift periods when production slow-downs were not a factor. Of course, the argument for grounding low voltage systems is to reduce the over-voltage failures that can occur in motors and allied equipment. These surges may come from lightning, switching large blocks of power on primary circuits, intermittent grounds on ungrounded neutral systems, or resonance effects resulting from several causes.

Ground detectors are extremely essential with ungrounded systems. The electrostatic types which require full line voltage at the operating panel are frowned on because of voltage hazards difficult to shield or insulate. Fig. 1 illustrates a system with features that recommend it for most installations using ungrounded power circuits. The lead from the transformer need not be brought to the control panel with the regular instruments since the step-down transformer may be located anywhere convenient to the main supply transformer. The secondary may then be readily extended through normal wiring to the variable resistor, relay and warning devices.

Fig. 2 is still another illustration depicting a popular device for installation at any convenient point on the high voltage circuit. The diagram illustrates the construction of a detector unit of 3 potential transformers ordinarily used for metering service, 3 lamps, a relay, and a horn. A ground on any line tends to short out the corresponding primary of the potential transformer connected to it, thereby unbalancing the delta secondary connections through the lamps. The developed circulating current flowing through the coil of the relay closes same and sounds whichever type of alarm one's fancy may select.

Detectors Aid Preventive Maintenance

Whichever type of detector is employed, they all, within the limits of their scope, serve as watch dogs to keep constant check on the condition of the insulation. Many faults are of the incipient type that begin innocently enough with hardly a ripple appearing on the smooth functioning control board. If detected in time fault troubles, like human diseases, can be coped with so that serious shutdowns can be avoided. Usually, the condition does not worsen speedily because of the slow infiltration of the deteriorating factors, thus permitting the engineer to marshal his forces for convenient week-end or holiday wire or cable replacement.

In addition to the switch panel mounted instruments, one large government munitions plant installs fused receptacles on all principal disconnect panels. These are visited monthly by an inspector who carries a portable instrument equipped with a suitable connector jack. By this means all of the distribution is kept under close surveillance at all times. As I said above, when the distribution is operated ungrounded, a single ground fault, even if "solid" as the trade terms it, can be continued in service for an extended period of time. It is only when the second fault occurs that things begin to happen—fast! Long before that fateful period of accounting, the plant engineer has relayed the load to other lines and spared himself the ignominy of a shut-down.

For the increasingly popular 460 volt, 3 phase service, a very popular device is diagramed in Fig. 3. It employs six, 230 volt lamps arranged in a Y formation with the ground connection taken off at the center.

Fig. 4 indicates a gadget for application to power services above the conventional 460 volts. Resis-

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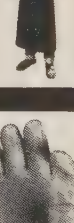

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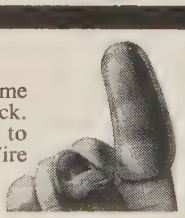

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(For details, use Key # C-10 on card on page 75)

tors of the proper size are coupled with the 230 lamps; and, in conjunction with the push button switch, make up a serviceable unit.

Fig. 5 pictures the simple but dependable 3 lamp arrangement where 230 volt service is being monitored. A feature of this little gimmick is that several lamps brighten as others go progressively dim. With the circuit free of ground the full lamp bank burns at one-half voltage.

Human lives are too often at stake, where electrical safety is concerned. Grounds, short circuits and false starts in machinery can be prevented only by maintenance.

Pictures by courtesy of Tennessee Valley Authority.

The first part of this article appeared in the February issue of S. M. & P.

Ten Problems of Industrial Truck Maintenance

THE EXPERIMENT in bringing fork truck maintenance training right to the door of the customer has been highly successful, according to the Clark Equipment Company, whose Mobile Service School recently marked the completion of its first year's travels. The school visited 43 cities in 24 states and three Canadian provinces. More than 4000 fork truck operators and maintenance men from some 1500 companies attended the training sessions to receive instruction in the proper operation and maintenance of the company's gas and electric fork trucks, straddle carriers and powered hand trucks.

The Mobile School supplements a comprehensive three-week maintenance course held regularly at the Service Division headquarters in Jackson, Mich. Clark has announced that the school will be kept on the road for another year.

Ten Questions

Thousands of questions on fork truck maintenance were asked and answered during the sessions. Listed here are ten of the most-asked questions, and Clark's answers:

Question 1: Why do you recommend that engine oil be changed so often? Engine oil should be changed every 40 to 50 hours of operation. This isn't really "often" if you compare it to your automobile. The number of RPM's the fork truck engine turns over per hour is equal to an automobile operating at 40 miles per hour. Therefore after 40 to 50 working hours your fork truck engine has been subjected to the same wear as an automobile traveling 1600 to 2000 miles.

Question 2: Is it necessary to change the oil filter every time the engine oil is changed? Yes. The oil filter cartridge can do only so much work. Even if it is clean on the outside, it becomes plugged on the inside with impurities, foreign particles, water from condensation and dilution from the crankcase. Leaving a dirty filter in when oil is changed would contaminate the new oil.

Question 3: What grade and type of oil should we use in our fork truck engine? For temperatures of zero and below use an SAE-10 oil. For temperatures from zero to 32 degrees, use an SAE-20. For temperatures above 32 degrees, use an SAE-30. The oil we recommend is the heavy duty, high detergent type known as an MS service oil. One word of caution: Never mix an MS oil with a straight mineral type of oil.

Question 4: What type and grade of gasoline should we use? If by "type" you mean brand, we don't recommend any one in particular. We DO recommend use of a premium grade because you'll get better engine performance. A premium grade of gasoline has fewer low burning carbon ends which can be deposited in cylinders and on pistons to interfere with proper engine operation.

Question 5: Why do you use the type of pump that you do for your hydraulic system? The vane type, gear driven, positive action pump is efficient in operation and easy to maintain.

Question 6: How often and with what should we clean our fork

(Continued on page 34)

KEEPING UP WITH..

Recent Developments in Plant Maintenance

BUILDING & EQUIPMENT MAINTENANCE SERIES
other articles in January and February

DUAL-PURPOSE STEAM CLEANING COMPOUND

A STEAM CLEANING compound, "ST-35," can be used both as an additive to make steam cleaning more effective and also, when diluted with hot water, as a cleaning solution for factory and office floors. Made by John B. Moore Corp., it is a heavy duty detergent with excellent wetting and cleansing action, for removing dirt, grease and soil from metal, cement, stone, painted and lacquered surfaces.

It is said to be non-combustible and to create no toxic vapor hazards. Because of its highly concentrated form, shipping costs are saved. Uses range from steam cleaning of heavy mechanical equipment, through plant and building maintenance, to washing truck bodies and cleaning concrete floors. Available in 54-gallon and 5-gallon drums.

For details, use Key # PM-1 on Inquiry Card on page 75.

NEW MASONRY PAINT

AN EXTERIOR rubberized masonry paint is being marketed by the Pittsburgh Plate Glass Co. An unusual property of the paint is its ability to waterproof the exterior while it lets water, in the form of vapor, pass through the film from interior to exterior, thus preventing the formation of blisters which cause paint to peel.

The new product, a polyvinyl acetate formulation, will be known as "Cementhide Rubberized Masonry Paint." It is a water emulsion paint and requires no petroleum or coal tar solvents.

It is said to possess the same easy, quick-dry application properties as latex emulsion interior finishes. It may be applied by brush, roller coater or spray. No primer or sealer is required, and brushes or rollers may be easily cleaned in warm, soapy water. It will be available in eight colors and white. Many additional hues may be obtained by intermixing. The paint may also be applied to interior masonry surfaces provided hydrostatic pressure is not involved.

It is suitable for use on brick, stucco, concrete block, and cement-asbestos shingles. The finish is resistant to moisture and sunlight and provides protection against dirt collection and stains.

For details, use Key # PM-2 on Inquiry Card on page 75.

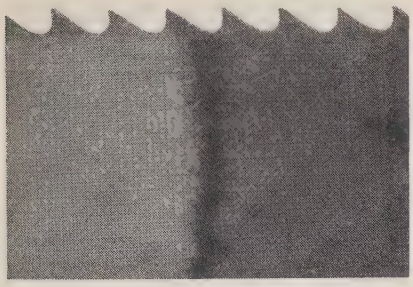
ALL-PURPOSE FLOOR MACHINES

VERSATILITY AND ease of operation are features of the Model 800 series of floor machines made by Finnell System, Inc. The carefully balanced motor-weighted design of the combination scrubber-polisher permits maximum efficiency and minimum fatigue for the operator.

With suitable accessories, the units can wet-scrub, dry-scrub, apply wax, polish, steel-wool, shampoo, disc-sand or grind. A safety switch is mounted on the handle, which can be adjusted for height. A simplified brush construction equalizes the flow of the scrubbing solution and reduces brush replacement. This model is available in three sizes: brush diameters of 15, 18 and 21 inches.

For details, use Key # PM-3 on Inquiry Card on page 75.

Recent Developments



POWDER RUST REMOVER

A NEW NON-TOXIC rust remover, in powder form, is being produced by the By-Buk Company. By dissolving the powder in water, the strength of the resulting liquid rust remover can be controlled to meet any de-rusting or corrosion removing requirement for ferrous or non-ferrous metals. It is non-toxic, non-obnoxious, non-flammable, leaves no alkalies and requires no neutralizer. It leaves on the derusted surfaces a thin rust-resistant coat, ready—with no other treatment—for paints, nickel or chromium plating, galvanizing and other protective coatings.

The derusting action is very fast and reaches into inaccessible crevices, cracks and recesses. It is effective for removing corrosion from aluminum, magnesium, copper, brass, bronze, galvanizing, stainless steel, etc.

For vertical surfaces and large objects, such as machinery and structures, which cannot be submerged in a liquid bath, a thickening agent is added so the solution will adhere to such surfaces.

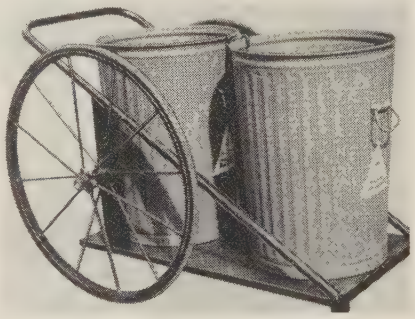
For details, use Key # PM-4 on Inquiry Card on page 75.

VAPOR BARRIER ROOF

FIRE-RETARDANT flexible material is being used in a new roof construction which may prevent future disastrous industrial fires. Developed by Lexsuco, Inc., the new construction utilizes a "vapor barrier" of Koroseal flexible material manufactured by the B. F. Goodrich Company Industrial Products Division. The vapor barrier design prevents drippage of flammable asphalt or tar, and eliminates all combustible materials between roof deck and insulation.

A typical installation may consist of standard steel decking on which the vapor barrier is laid. The Koroseal used is a black opaque film, .004-inch thick, and comes in rolls of a convenient size for workmen to use. This is followed by a conventional roof insulation which is fastened to the steel deck by Lexsuco steel insulation clips. In the picture, a workman is applying an adhesive for lap-sealing the vapor barrier on top of the steel deck. To the left is fiberglas insulation topped by two layers of dry roofing felt.

For details, use Key # PM-5 on Inquiry Card on page 75.



SANITATION CART

A LINE OF Sanitation Carts is being introduced by the American Conveyor Company. Three models, each of which has been designed to serve a purpose, are available. Most popular is Model 2CF which is a two can cart approximating the width of a one can cart.

Swivel ball bearing rubber tire front caster wheel serves to provide short turning radius for cramped quarters. Spring loaded "J" hooks securely lock can to cart yet easily detach when removing can. Rubber tired spoke main wheels, paint coated galvanized can, dropside can handles and conveniently located broom holder are just a few of the standard features. The Sanitation Cart is the solution to the material handling problem of cleaning streets, playgrounds, parks, fairs, hospitals, institutions, industrial plants, auditoriums, warehouses, etc.

For details, use Key # PM-6 on Inquiry Card on page 75.

DUST-ABSORBING SANDER

A VACUUM attachment unit and a line of accessory dusting and cleaning tools have been introduced by the Atlas Floor Surfacing Machinery Corp. This "Atlas Floor-Vac" and the accessory tools are designed for the firm's Heavy Duty Floormaster Machines, which are used for buffing, polishing, steel-wooling, sanding, and other floor maintenance work. The vacuum attachment immediately picks up the dust raised by these operations and prevents it from settling elsewhere.

The vacuum attachment may also be used with accessory equipment for cleaning crevices, radiators, venetian blinds, window sills, and walls, etc. The extension hose is a 10′ flexible, heavy-duty section with an inside diameter of 1¼″. The wand consists of seamless steel, nickel-plated tubing, 52″ in length and 1¼″ in outside diameter. The vacuum motor operates on AC or DC at 12,000 rpm and 110–120 volts.

For details, use Key # PM-7 on Inquiry Card on page 75.

NEW FLOOR FINISH

A FLOOR dressing, called "Lab-Cote," is said to be hard, easy-to-maintain, and resilient. Chemical Service of Baltimore, Inc. claims that it protects all flooring surfaces with a clear, transparent film which resists soil absorption and has high anti-slip features. It is said to outwear wax dressings, remains buffable and can be easily removed. Samples are available.

For details, use Key # PM-8 on Inquiry Card on page 75.

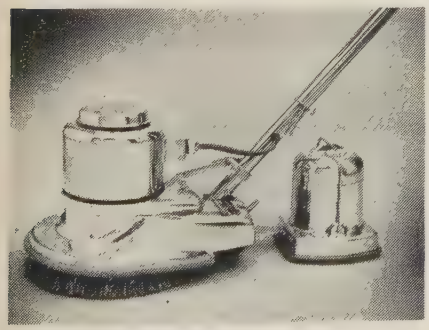
NEOPRENE COATING

A THICK, paint-like liquid of high solids, "Magic-Vulc Neoprene Maintenance Coating No. 245-B," may be brushed or sprayed on most surfaces. No primer or accelerator is required. It is a "one-shot," or one-solution product, ready to use directly from the can. The standard color is black, but aluminum and other colors are available from Magic Chemical Co.

The dry film forms a tough, adherent protective coating which is resistant to water and chemical solutions under conditions of total immersion. It may be used for very severe service conditions and will adhere to metal, concrete, wood, plastic, glass and other surfaces. It resists the action of oils, alkalies, strong sunlight, sea water and many other corrosive conditions. The coating is elastic, as well as tough, and will not crack under extreme weather conditions and rapid temperature changes. The coating is easily repaired if accidentally damaged.

It is used for protection of steel structures or equipment, tanks, blowers, housings, ducts, fume hoods and many other types of industrial structures. It is also used as an anti-skid coating, caulking compound, sealing compound, formed-in-place gasket, and for resurfacing worn conveyor belts, for pulley lagging, for protecting boat bottoms, for repairing electric cable and wire insulation, and for protecting electrical equipment housings.

For details, use Key # PM-9 on Inquiry Card on page 75.



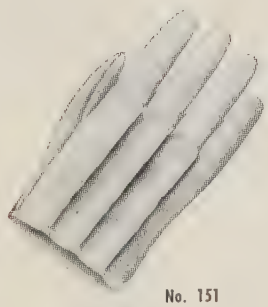
WAX APPLYING ATTACHMENT

A NEW WAX concentrate and patented applier to reduce floor waxing costs has been announced by Piatt & Smillie Chemicals, Inc. The "Econoplier," which fits any make

Edmont Case No. 502: Handling lumber, vitrified tile, etc., Edmont **job-fitted** gloves with coated palms outwore canvas up to 10 times, gave safer grip and protection against hand injury.

Safer work handling with job-fitted gloves

No. 62W Grab-it rough rubber coated



No. 151 Plax plastic impregnated

. . 3 TO 10 TIMES LONGER WEAR

By fitting the glove to the job, you can substantially reduce lost-time accidents due to hand injuries. At the same time, you effect cost savings of 40% to 70% through longer wear, and improve employee comfort and morale.

Edmont makes over 50 standard types of gloves, palm coated or fully-coated with Neox (reinforced neoprene), natural rubber or vinyl plastic coatings. There's a type for practically every handling requirement including resistance to cutting, abrasion, oils, greases, acids, caustics, solvents, degreasants, extremes of heat and cold, etc. Our laboratory also develops special types for special conditions.

Edmont Case No. 208: Handling explosives in fiber cases, Edmont palm coated Grab-it gloves outwore leather palm gloves 3 to 1 and gave positive non-slip grip at all times.

Edmont Case No. 356: In handling laminated plastic, leading appliance manufacturer found Edmont's new PLAX gloves (light plastic-impregnated fabric) outwore canvas 4 times, and gave better protection against sharp edges.

FREE JOB-TEST OFFER: Send us a description of your operation, materials handled and temperature condition. Without cost, we will recommend the correct glove and send free samples for you to job-test.

The Edmont Manufacturing Co., 1256 Walnut Street, Coshocton, Ohio

World's largest maker of coated industrial gloves, available through leading industrial suppliers.

Edmont

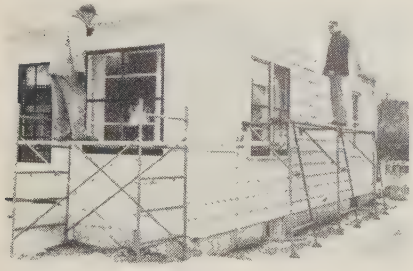
Edmont job-fitted gloves

(For details, use Key # C-11 on card on page 75)

or model of floor machine, enables the operator to buff and wax simultaneously. The motion of polishing mechanically spreads the wax concentrate immediately ahead of the polishing brush. It is said there is no drying time required, and no waste of material. The Econoplier is furnished to "First" Wax Concentrate users for $1.50 per year, under a standard lease arrangement.

The new "First" Wax Concentrate has been tested and approved by Foster D. Snell, Inc., consulting chemists and engineers, for use on asphalt tile. It is also suitable for use on vinyl or plastic tile, terrazzo, marble, magnesite, linoleum, rubber, hardwood, and composition floors.

For details, use Key # PM-10 on Inquiry Card on page 75.



LIGHT DUTY SCAFFOLD

A LOW-COST steel scaffold that provides platform heights up to 12 ft. is announced by Safway Steel Products, Inc. Permitting work as high as 18–20 ft., this light duty equipment is practical for outdoor or indoor use by carpenters, masons, painters, plasterers, electricians, sheet metal workers, roofers, etc. The new scaffold is sold as a "package" which includes: 3 rectangular 6-ft. frames, 3 tapered 6-ft. frames, 3 platform brackets, 6 rubber safety shoes, and 4 pivoted cross-braces.

To increase working efficiency on different types of jobs, these parts may be assembled in five ways. Individual frames are light and well-balanced, for easy handling and erection by one man. Frames, brackets and cross-braces are made of strong high carbon steel tubing. Rungs or cross members are welded. Parts may be transported readily and stored compactly.

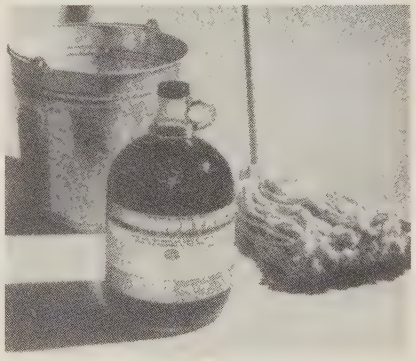
For details, use Key # PM-11 on Inquiry Card on page 75.

PORTABLE UPHOLSTERY CLEANER

A NEW LIGHTWEIGHT portable machine for cleaning upholstery, stair carpeting, automobile and other vehicle interiors has been announced by the Multi-Clean Products Co. Called the "Professional," it is hand-sized, and has a power unit weighing only 6 pounds. The firm but gentle shampooing action of the Nylon bristles makes it safe for even delicate fabrics.

Important features include: Special pump built into the cleaning unit gives accurate control of solution flow at point of work; clear plastic hose from tank to unit gives the operator complete maneuverability and won't mar furnishings; powerful lightweight motor operates from any standard light socket.

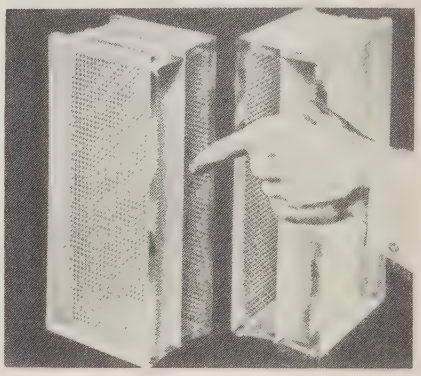
For details, use Key # PM-12 on Inquiry Card on page 75.



INDICATOR GERMICIDAL CLEANER

A NEW GERMICIDAL all-purpose cleaner for industrial and institutional use has been developed by West Disinfecting Co. Called Wescodyne, this new product is also a detergent. As an all-purpose cleaner and disinfectant, this product has the unique property of visually indicating its own germicidal activity. In solution, it has a yellow-brown tint which persists as long as germicidal activity is present; when the color completely fades, the solution is no longer active and should be replaced. It is effective in both warm and cold water, and hard water does not impair its germicidal action, the maker states. Wescodyne is a disinfectant recommended for use in hospitals, schools, food-handling and processing plants and for general industrial use.

For details, use Key # PM-13 on Inquiry Card on page 75.



GLASS BLOCKS CONTROL SUN'S GLARE

DOUBLE CAVITY glass blocks for exterior walls and roofs provide a soothing glow of daylight even in the harshest sunlight. Made by Pittsburgh Corning Corp., and called "Suntrol," these hollow glass blocks have pale green fibrous glass diffusing screens sealed into their centers.

The two partial vacuums in the blocks keep out much of the sun's heat, and the psychological effect of the color is also important. The filtered light makes people feel cooler and more relaxed regardless of the temperature.

Suntrol is an addition to the company's line of functional glass blocks which send light rays where they are needed. Light directing patterns throw light upward toward the ceiling where it is reflected; light diffusing patterns distribute light in all directions; and special skylighting blocks spread even, comfortable lighting over wide floor areas.

For details, use Key # PM-14 on Inquiry Card on page 75.

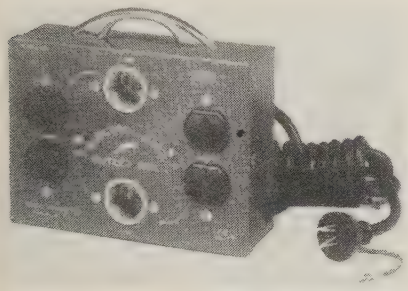
CLEANER REDUCES SHOWER SLIPPING HAZARDS

THE USE OF a chemical compound, Saf-T-Klenz, being made available by Berman Chemical Company, in cleaning shower stalls and swimming pool decks, reduces the hazard of

slippery floors by removing the grease film. It furthermore minimizes the conditions that breed and spread infectious germs. This powder cleaner is simply sprinkled sparingly on a damp surface. After a few minutes for dissolving, it is mopped lightly and then flushed with clear water. Algae accumulation, lime deposits, iron rust stains, soap oil and body grease are removed by chemical action without hard rubbing.

Porcelain drinking fountains, wash bowls, toilets and urinals are similarly cleaned without effort. It is safe to use on glass, porcelain, china, marble, tile, terrazzo, vitreous, and concrete surfaces. The odorless cleaner contains no caustic, lye, soap or carbonate, and will not injure hands, clothing, floors or drain. Free samples available.

For details, use Key # PM-15 on Inquiry Card on page 75.



GROUNDED OUTLET BOX

A SAFE method for using electric hand tools, test apparatus, or similar equipment at remote locations is possible with the new Electro-Safe Outlet Box. It may be used to advantage for maintenance or service work, or for quickly providing safe outlets for a production line. Made by Dalco Mfg. Co., Inc., the box is of rugged steel construction, plated and painted to withstand rough usage. The standard unit has two T-slot duplex receptacles with provisions for fusing and grounding, thus protecting both the operator and equipment. An 8 ft. 3-conductor line cord is generally furnished, but the unit may be purchased less cord or with any special length cord as desired. Outlets other than T-slot can be provided to meet specific requirements. Measurements of the box are 5½ x 7½ x 2½. It is finished in gray-brown Hammertone and has a chrome-plated handle for carrying.

For details, use Key # PM-16 on Inquiry Card on page 75.

Stop dangerous handling of INDUSTRIAL LIQUIDS

You can stop dangerous handling of liquids and frequently reduce insurance costs in the process, by using Tokheim Transfer Pumps in maintenance work. Spilling, slopping, over-filling and dripping—constant enemies of safety—are easily prevented. Your plant can be kept cleaner. Work is speeded. Waste is halted. Accidents are prevented.

Business and industry are daily finding more uses for these rugged little Tokheim pumps. They are available with hose or spout outlets and other optional attachments. Pump operates on both forward and back strokes and is capable of delivering 20 gallons a minute. Will pump 'most anything that pours. Offered with alternate parts to handle special liquids. No plant should be without a battery of Tokheims.

Call your dealer, your Tokheim representative, or write factory for literature.

QUALITY TOKHEIM DOUBLE-ACTION HAND PUMPS

General Products Division

TOKHEIM CORPORATION

Designers and Builders of Superior Equipment

1672 Wabash Ave. *Since 1901* **Fort Wayne 1, Ind.**

Factory Branch: 1309 Howard Street, San Francisco 3, California

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Gasoline Pumps and Accessories • Air and Liquid Dispensers • Specially Engineered Products

(For details, use Key # C-12 on card on page 75)

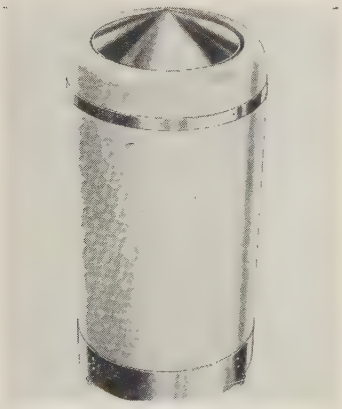
Recent Developments

IMPROVED WATERPROOFING

RECENT TESTS indicate the improved waterproofing qualities of Formula No. 640, a colorless liquid masonry sealer made by Haynes Products Co. The sealer is composed of eight microcrystalline resins in a mineral spirits solvent. The liquid penetrates deeply and the solvent evaporates leaving the pores filled with a plastic mass impervious to water and highly resistant to acids, alkalies, weathering and oxidation.

In the tests, a block of Bedford stone treated with the sealer was sprayed with water for 24 hours. The gain in weight of the stone from water absorption was 3/100ths of 1 percent.

For details, use Key # PM-17 on Inquiry Card on page 75.



ALL-DIRECTION WASTE CAN

A NEW waste receptacle, the Solar Jet, specifically designed for easy access from any direction, has been introduced by the Solar-Sturges Mfg. Div. of Pressed Steel Car Co., Inc. The self-closing waste receptacle has a dome top of stainless steel, which swings freely inside the outer shell. Because of this feature, it operates perfectly in any location and can be placed against a wall or in a corner, when space is limited.

The dome top, the only moving part, is securely attached to a ball suspension joint located immediately beneath the point of balance. Rigorous tests have proved its serviceability. Modern, handsome appearance makes the unit an attractive addition in any location. The outer shell of gleaming white baked enamel finish is light weight, easily removed. Inner container of heavy galvanized steel, with handle for easy emptying, rests on three stainless steel legs, which hold receptacle 7/8" off of ground or floor. Available in 30½" and 36" heights. Both sizes are 15" in diameter. Suggested locations are corridors, entryways, waiting rooms, sales floors, industrial plants, cafeterias and restaurants, public buildings, and near drinking fountains and vending machines.

For details, use Key # PM-18 on Inquiry Card on page 75.

RESURFACING MATERIAL

A NEW ready-to-use floor resurfacing material said to be smoother, easier to apply, and capable of withstanding heaviest traffic within one minute after application is announced by The Monroe Company, Inc. This plastic flooring, "Swift-Floor Medium," is the result of a new process which assures uniformity of every plastic granule. These granules are able to knit together much faster than previous types. The material also contains Cryptolite, a many-sided prismatic crystalline material, which is said to possess excellent adhering and binding qualities, and also to add greatly to floor strength.

A smooth, even floor can be laid simply by spreading the ready-mixed material, then tamping or rolling. The floor will withstand 50,000 lb. loads 60 seconds after application. Heavy loads are not required to compress the floor material. It can be applied over wood, concrete, brick or steel—indoors or out for patching, as well as resurfacing.

For details, use Key # PM-19 on Inquiry Card on page 75.

GERMICIDAL FLOOR WAX

A GERM-KILLING floor wax has been developed by Trio Chemical Works, Inc. Extensive tests by an independent laboratory indicated that a single application killed more than 99% of all the germs and bacteria found on floors, according to the maker.

In addition to its germ-killing properties, "Amazon Germicidal Floor Wax" is said to be non-irritating to hands, non-scuffing, water-resistant, non-flammable, slip-resistant, harmless to animals and people and is backed by the manufacturer's guarantee. Available in pint, quart and one-gallon sizes.

For details, use Key # PM-20 on Inquiry Card on page 75.

WET SURFACE ENAMEL

TWO IMPROVEMENTS have been made in the "Damp-Tex" wet surface enamel produced by Steelcote Mfg. Co.: 1. odorless properties, from the use of odor-free thinners and neutralizers, to prevent tainting of foods, and 2. a permanent non-yellowing white.

The enamel is for interior use and will adhere to water-soaked surfaces. It is resistant to mildew, gases and acids. The coating is used in breweries, paper mills, laundries, food plants, canneries, shower rooms, refineries, textile mills, etc. Available in white, black, aluminum and 14 colors.

For details, use Key # PM-21 on Inquiry Card on page 75.

RAPID WATER PICK-UP

MAINTENANCE MEN for industrial plants, stores, office buildings, schools, hospitals and other large floor areas will find unusual features

in the "Rapid Dryer Water Pick-Up Machine" being marketed by Wells Research & Engineering Co. Attached to the front of the frame are two independent live-rubber squeegee blades, adjustable to from 2 to 4 foot widths, for covering odd shaped areas and uneven floors. The vacuum unit has a tank equipped with 4 independent rollers and capable of holding 15 gallons of water.

With this equipment, it is said the operator can dry floors as fast as he can walk, or 4000 square feet of flooring in ten minutes.

Suitable for all types of floors, including wood, cement, rubber, asphalt and Vinyl tile, marble, concrete, terrazzo, etc., this equipment is easy to operate and maneuver, and is versatile. It can be used as a regular vacuum cleaner by lifting the vacuum from the frame and setting it on its own castors.

For details, use Key # PM-22 on Inquiry Card on page 75.

HEAT BARRIER ROOF

AN ALUMINUM asbestos roofing manufactured by Colonial Refining & Chemical Co. acts as insulation against hot sunlight. When the "3R Aluminum Roof Coating" is applied, building interiors are kept cooler. The material is applied in a one-coat brush application. In tests, roof temperatures dropped 24 degrees in ten minutes after application of the liquid aluminum. The aluminum reflects the infra-red rays of the sun and thus reduces the "heat load" of air conditioning systems or lowers the temperatures of buildings without air conditioning.

For details, use Key # PM-23 on Inquiry Card on page 75.

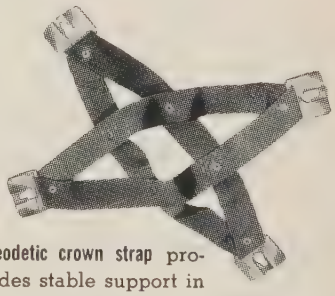
HERE'S WHAT WILLSON
SUPER-TOUGH®
HATS HAVE THAT NO OTHER SAFETY HAT HAS!

It takes more than a strong, tough hat shell to provide full head protection—*both external and internal!* Only Willson Super-Tough® Hats and Caps give you that *extra* protection!

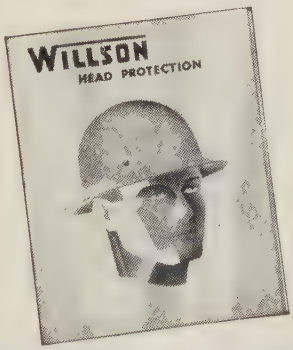
And that *extra* protection and wearer comfort is possible because of this unique, patented geodetic crown strap and pneumatic head band, developed by Cornell Aeronautical Laboratory, Inc.

Get the complete story on this new, revolutionary, scientific advance in head protection. Write for this new manual and catalog on head protection.

Super-Tough® hat cut away to show how the patented head gear fully cradles the head.



Geodetic crown strap provides stable support in all directions with no concentration of load in tie string on top of the head.



Patented pneumatic cushioned, all plastic head band providing scientific "metered air" shock absorption.

More Than 300 Safety Products Carry This Famous Trademark
WILLSON®

Leaders in Research and Development of Safety Equipment Since 1870

WILLSON PRODUCTS, INC., 207 WASHINGTON ST., READING, PA.

(For details, use Key # C-13 on card on page 75)

(Continued from page 26)

trucks? We suggest a high pressure steam jenny. If not that, a good chemical cleansing agent that is non-explosive or has a very low flame test. It's important to keep fork trucks clean. Accumulated dirt cuts down efficiency. Remember, too, that there's a psychological factor involved. A dirty machine invites sloppy handling. A clean machine encourages good driving and careful attention. Fork trucks should be cleaned every week.

Question 7: Will maintenance help reduce accidents? Some, but not all. Properly scheduled, thorough maintenance will prevent occurrence of accidents due to mechanical difficulties. But by far the most accidents are caused through operator negligence. The only way to stop these accidents is through a driver training program which educates operators in safe driving habits.

Question 8: Do the forks of the truck require any special maintenance? No. Caked grease or dirt should be removed, and every 900 or 1000 working hours the forks should be checked for proper alignment.

Question 9: How often should wheel bearings be cleaned and repacked? About every 1000 working hours.

Question 10: Can you give us any general tips on how to make fork truck maintenance easier? Thorough check-ups every week or two—depending on the work-load of the fork truck—will enable you to catch the occasional minor difficulties that might develop into major trouble later on. Get to know your fork truck inside and out. The more familiar you are with it, the easier it will be to take care of any troubles that arise. A system of check-charts and schedules will help you plan your work more efficiently and save hours.

Industrial Truck Safety Course

IMPROVEMENT in the safety and efficiency of industrial truck operation are the objectives of a course being conducted for the second year by the Philadelphia Safety Council of the Chamber of Commerce of Greater Philadelphia. Consisting of 6 two-hour sessions, the course is being held at the Naval Aviation Supply Depot and is under the direction of Walter W. Matthews, Managing Director of the Philadelphia Safety Council.

Officials of the council point out that this is the first course of its type ever offered by a safety council. With increased country-wide emphasis being placed on the importance of the safe operation of automobiles on roads and highways, the Philadelphia Safety Council felt that it was logical that proper attention be given to safety on industrial highways located in plants and warehouses where traffic consists of industrial lift trucks, tractors and other materials handling equipment.

Students for the course include persons responsible for the flow of materials through their plants and include safety engineers, materials handling engineers, supervisors and key operators. Instruction consists of classroom work, films, demonstrations and actual operation of the various pieces of equipment by students.

Cooperating with the Philadelphia Safety Council are the Philadelphia Naval Aviation Supply Depot which has made available classroom and operational areas and The Yale & Towne Manufacturing Company which has provided the industrial truck equipment used for instructional purposes.

Fatigue and Safety

WORKERS' FATIGUE, one of the most insidious and widespread causes of high production costs, results in a huge annual economic loss, according to Elmer F. Twyman, Vice President of The Yale & Towne Manufacturing Company. A substantial portion of the economic and social waste caused by industrial fatigue can be effectively diminished by the use of modern materials handling equipment.

Citing the findings of a fatigue study, Mr. Twyman pointed to the following:

"More deaths occur among industrial workers at corresponding ages than among clerical workers, the higher mortality rate being due to factors causing fatigue.

"The Caen Report of the Gulf Coast Regional Conference on Industrial Health asserts that losses due to fatigue are greater than compensated claims.

"Among the results of fatigue as described by the U. S. Bureau of Mines are: inaccurate movements; lessened ability to perform, thus decreasing productivity and efficiency; increased accidents and proneness to accidents; increased absenteeism; diminished quality of production; and lowering of mental aptitude.

"Studies in the textile industry indicate that the use of mechanical hoists to reduce the amount of heavy lifting and of electric lift trucks to move heavy cloth rolls resulted in over-all increases in efficiency and production and contributed a marked improvement in morale.

"A consensus of opinions of experts in the fields of industrial medicine, industrial engineering and safety engineering shows that loss in production is by no means the total loss resulting from fatigue."

Mr. Twyman said that "back-breaking" work in factories and service enterprises still using old manual handling methods results in physical and psychological wear and tear.

"While some of the problems of lessening industrial fatigue must be met by experts in industrial medicine and psychology," Mr. Twyman said, "a very substantial part of the problem will be solved by the materials handling equipment industry, as its labor-aiding, energy-conserving modern machinery wins greater and greater acceptance."

Industrial Hygiene

Air Pollution From Auto Exhaust Attacked On Two Fronts

Exhaust Control Research

PLANS HAVE been completed by the Air Pollution Foundation in Los Angeles for the stiffest road tests yet given the Houdry catalytic converter, one of the most promising devices aimed at controlling emission of hydrocarbons from auto exhausts in the battle against smog.

The Air Pollution Foundation has contracted with the Southwest Research Institute at San Antonio, Texas, to check the operation of two types of mufflers: one for use with nonleaded white gasoline and the other for use with gasoline containing tetraethyl lead.

Two mufflers for white gasoline will be tested on 1954 Chevrolets and four for leaded gasoline will be used on a 1954 Ford, a 1954 DeSoto, a 1953 Buick and a 1953 Cadillac—a total of six different mufflers for this initial proving-ground program.

Each of the six autos will be put through a 20,000 mile road test—considerably more miles than the average car owner drives in a year. At the end of each 1,000 miles, exhaust gases will be analyzed to determine if the catalytic units are continuing to function properly. The engine also will be examined to determine the effect of the unit on operating characteristics of the car and maintenance.

One of the automobile mufflers was tested last year, and it was estimated that the muffler was at least 80 percent efficient in eliminating hydrocarbons from the exhaust.

Engine Research

A TWO-WAY attack on the problem of reducing the amount of unburned fuel in auto exhaust gas was reported, at a Society of Automotive Engineers air pollution symposium, in two technical papers from General Motors Research Laboratories Division, listing results of both laboratory and road tests.

In the first report F. G. Rounds, P. A. Bennett and G. J. Nebel detailed their studies of vehicle exhausts under four typical driving conditions—idle, acceleration, cruising and deceleration. Their work involved exhaust gas samples from 180 automobiles. Road tests duplicated typical city traffic driving conditions.

Another report on the problem was made by J. T. Wentworth and W. A. Daniel. They used single-cylinder test engines in the laboratories with quartz "windows" in the cylinder heads for observing the entire combustion process. With highspeed motion pictures they made basic studies of combustion flames to determine the cause of unburned hydrocarbons in exhaust gases. Their photos showed that engine combustion is incomplete with an engine decelerating or idling.

Furthermore, they described two test devices that have shown promising results in reducing objectionable compounds in exhaust gas.

The Rounds-Bennett-Nebel report revealed:

1. At brief periods when motorists decelerate from

(Continued on page 40)

We th
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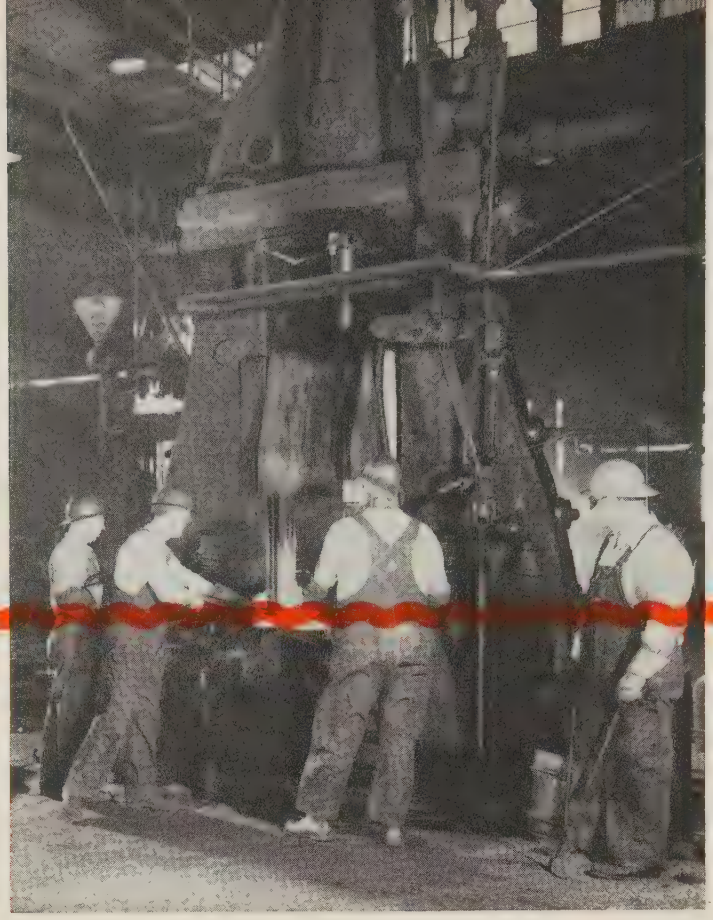
OF

By W. F. SHOLTZ
Supervisor Industrial Hygiene
Allis-Chalmers Mfg. Company
West Allis, Wisconsin



INTEREST IN INDUSTRIAL hearing is constantly increasing because exposure to sound under certain conditions has impaired hearing. This interest is reflected in both management and labor circles.

Spurred by public interest, coming from what seems to be premature publicity, industry has been forced to take a stand on the problem. This, despite the fact that studies to date have merely outlined important uncertainties which make immediate establishment of standardized tests and measurements difficult.

Fortunately, a great deal of valuable preliminary study enabled our plant to set tentative standards which ultimately have helped us chart a course for our program. This will, we hope, bring us toward control of the problem to the satisfaction of everyone.

As a result of the experience gained in these basic studies, we have been able to develop a program which is rapidly taking shape. For anyone interested in starting a similar program, the following suggestions are worth considering.

Spot Checks

First, make a spot check of the plant with a sound level meter to see how much noise there is and where to locate it. If you find places where the noise level is more or less continuously high, a program of audiometric examinations is in order. These noise level spot checks should be followed by a complete sound level survey. After you have surveyed the plant, make a sound band analysis and possibly tape recording at locations where sound level readings are above 85 decibels. This data will be particularly helpful in planning a noise abatement program. Thereafter, make periodic follow-up surveys. Also, be sure to check all new, repaired, or transferred equipment.

A level of 85 decibels has been accepted only as a starting point for sound band analysis, and does not establish a level at which hearing loss begins.

Audiometric Examination

Give all new employees a pre-employment audiometric examination. For statistical purposes, it is desirable to take an audiogram on a pure tone audiometer in the frequency range of 125 to 12 thousand cycles. Ordinarily, the range of 250 to 8 thousand is used. It is also important to record the age, sex, and occupation of the employee. The previous work history should reveal the operations he has been exposed to in the past.

For example: "Did he work as a milling machine operator, a ribbon salesman, or as a boiler maker's helper? What was his opinion of the noise level where he worked? Did he think it was noisy? Could he carry on a conversation without difficulty?"

Record also his military service record, specifically stating what branch of the service he was in, what he did, and for how long. Such questions could include: Was he a machine gunner, an MP, an office worker, radar operator, etc?"

The next questions to ask are: "Is your hearing good?" This can be answered either yes or no. "Can you hear

k we have ble method . . .

HEARING CONTROL

NOISE CONTROL SERIES
more articles in April and May

When someone claims a hearing loss . . .

. . . it is important to make a detailed investigation. In our plant this investigation covers the following. Maybe you can adapt it for your plant.

1. **General Information**
   - a. *date of investigation—by whom requested?*
   - b. *discussion of complaint, and date of noticeable onset.*
   - c. *name, age, social security number, clock number, shop and department number, shift, foreman*
   - d. *specific job—by name*
2. **Previous Work History—Outside**
   - a. *past work history—employer, job assignment and date, brief description of each job, type of equipment or machine used, and length of time on each*
   - b. *type of other activity around job*
   - c. *others*
3. **Present Work History**
   - a. *complete description of all jobs at A-C, type of equipment or machine used, length of time on each job*
   - b. *was ear protection used—type*
   - c. *type of other activity around jobs*
   - d. *sound level readings, including sound band analysis*
   - e. *others*
4. **Medical History**
   - a. *past—childhood diseases, head injuries, ear trouble, sports, military service*
   - b. *medical history, if any from previous job*
   - c. *present medical history*
   - d. *present and pre-employment audiograms*
   - e. *percent of hearing loss by interpretation, hospital record, examination (by company doctor or other)*
5. **Discussion**
   corrective action or recommendations discussed with supervisors or other pertinent parties
6. **Conclusion**
   summarize high points, recommendations and corrective action adopted

over the telephone, in a theater, in a single conversation or group conversation?"

It is also desirable to know if he is using a hearing aid, and if so, for how long he has worn it. Another important question is: "Do you, or have you ever, used ear protection?" It can be followed with such questions as: regularly-often-seldom. Also find out what type was used. It is interesting to note that some of the answers we received included: oil soaked cotton or dry cotton, 32 caliber shells, round head screws, gum, and even rubber pencil erasers. It may seem to some readers that the value of this data is questionable, but at least for

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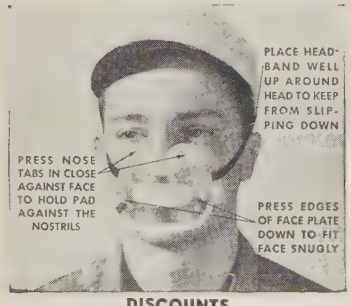
(For details, use Key # C-14 on card on page 75)

MARTINDALE

PROTECTIVE MASKS


PLACE HEADBAND WELL UP AROUND HEAD TO KEEP FROM SLIPPING DOWN
PRESS NOSE TABS IN CLOSE AGAINST FACE TO HOLD PAD AGAINST THE NOSTRILS
PRESS EDGES OF FACE PLATE DOWN TO FIT FACE SNUGLY

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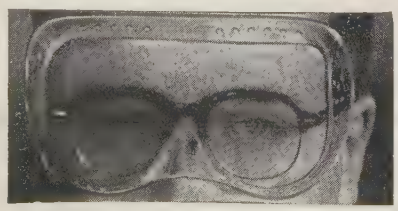

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(For details, use Key # C-15 on card on page 75)

the present we feel it is important for research purposes. The employee should also be given an otoscopic examination to exclude present ear discharge or wax. This should be done by the examining doctor.

25 Percent Hearing Loss

In checking over 3 thousand pre-employment audiograms, we found that 25 percent of new employees had some type of audiometric loss. We recognize, however, that this represents only hearing losses found in an industrial segment in the Milwaukee area. It will probably be different for the general population and may vary considerably with geographical locations.

New employees going into areas where sound level readings are above 85 decibels should be rechecked before their probationary period has ended (in many plants this is three months) and then again 6 months after this examination. After that, examine them again every year.

I want to emphasize again that the figure 85 decibels, as I mentioned before, was arbitrarily set by our medical department as a level at which it was desirable to study possible audiometric changes among employees. If periodic physical examinations are given, the audiometric examinations should be part of it. However, eventually all employees should be covered by audiometric examinations.

If an employee shows a significant loss of hearing on the recheck, particularly a new employee, he may have a noise susceptible ear. If so, protect his ears with properly fitting and effective ear defenders. If these are not sufficient protection on a particular job, you may have to transfer the employee to a less noisy location. In this connection, a noise abatement program should also be considered to reduce the over-all noise level. The noise level at which an employee works should be entered on his audiometric record. Keep audiograms on file in the medical department as a part of his medical record. Sound level survey and noise abatement data should be centrally located and available to all interested parties.

The Examination Room

If you are going to conduct audiometric examinations on the premises, record them in a room, preferably part of the first aid facilities, where a noise level of less than 50 decibels is present. It is also important that the noise level be fairly constant. If the noise level in the room where the audiometric testing is conducted is high, acoustical engineers should be brought in to correct it.

We have found it practical to train our own audiometer technicians. Our medical department conducts this training, briefly as follows. A simplified description of what noise is and how it can be measured and evaluated is given each trainee. The use of the audiometer and its ramifications are demonstrated. Then we give the trainee an opportunity to practice approximately two or three hours, taking audiograms of various people

in the medical department. Then his instructor rechecks him to see that the audiograms have been made according to instruction. If the trainee has made satisfactory progress, he is permitted to make audiometric examinations under close supervision of the instructor. In addition, written instructions, detailing each step, are given each trainee, to be sure all operators take audiograms in the same way.

I have merely attempted to highlight the noise problem and examine what we think is a workable method of control. Admittedly, there is no ready or easy answer. We are, however, confident that further progress in noise control is a certainty, and final control is likely in the future.

From an address delivered at the 41st National Safety Congress. Picture by courtesy of Allis-Chalmers Mfg. Co.

Who Says Safety Shoes are Protective?

(Continued from page 15)

top of the ball to indicate sufficient width. If these rules are followed, the shoe will not harm the foot.

Overall Problem—Shoes and Feet

The problem of shoes and feet and their work together is a problem of all industry. By applying the principles of constructive medicine to the sale of safety shoes we believe you will see a new orientation or approach to this problem.

In thinking about it, one might say that the safety shoe is a "preventive" device. It is to prevent something bad from happening. By applying the principles of constructive medicine, we feel that the safety shoe is an item of "constructive" effort. ***It is there to cause something good to happen, not necessarily to prevent something bad from happening.***

On the basis of the usual, and rather negative approach to safety shoe sales, the only man who derives any benefit from his safety shoe is the one who drops something on his toe. This negative concept stems from the simple fact that safety men have always looked at the safety shoe as a preventive device. We believe that benefits from a properly fitted, heavy duty shoe, as an aid to foot health, are constructive and positive.

Certainly shoes are not the entire answer to foot problems. But our clinical experience proves beyond doubt, that regardless of the specific foot ailment involved, the first step toward healthy, productive feet must be taken in a shoe properly designed for the job and correctly fitted to the foot.

Safety men should rearrange their thinking on the application of safety shoes. ***Stop selling safety shoes for the harm they can prevent.*** Start being positive, start applying the principles of constructive action to your safety shoe program and sell shoes for the good they can do.

From an address presented at the 41st National Safety Congress. Pictures by courtesy of Peda Spray Co., Inc., and Westinghouse Electric

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- Simply slip GETS-A-LITE GUARD AND GUIDE over the fixture, as illustrated.
- Made of indestructible spring steel wire. Nothing to break, get out of order or replace. Will last indefinitely.
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- Available for 40 watt and 100 watt fluorescent lamps.

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(For details, use Key # C-16 on card on page 75)

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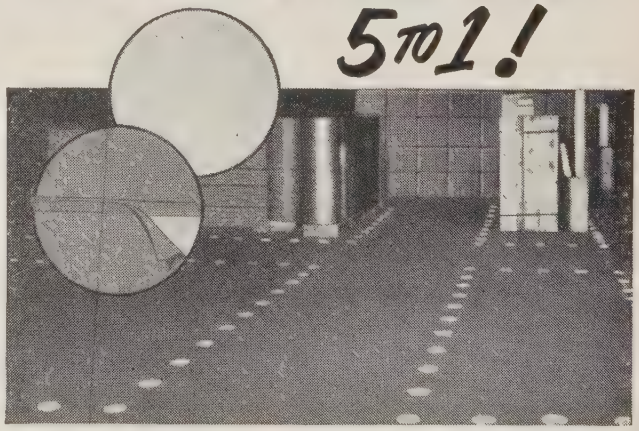
OUTLAST PAINTED LINES 5 TO 1!



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The Industrial Nurse

Physician-Nurse Relationship

THE Medical Advisory Council of the American Association of Industrial Nurses met in New York in conjunction with the Executive Committee of the American Association of Industrial Nurses. One of the important decisions arrived at was adoption of a statement of "Principles to Govern the Relationship between Physician and Nurse Working within Industry." The resolution was:

The Physician-Nurse relationships in industry is based upon certain reciprocal attitudes, obligations and responsibilities. Working together as an effective team, the physician and nurse gain their objective which is to promote the health and welfare of the employee.

In the practice of medicine and nursing the nurse looks to the physician for support, authority, help and guidance. And the physician looks to the nurse for applied skills, good judgment, integrity and a willingness in the performance of nursing duties.

Principles to govern the physician-nurse relationship within industry are:

1. Conformance to the accepted ethical standards of the nursing and medical professions.
2. Recognition of a mutual objective.
3. Mutual respect, confidence and loyalty between the physician and nurse.
4. Recognition of the physician's authority in all matters pertaining to the care of the patient.
5. The nurse establishes standards of nursing procedures and is directly responsible for the quality of these services.
6. Recognition of the dignity of the industrial nurse and an appreciation for the nurse's contribution to the health program.
7. Channels of authority for the responsibility of administration of the health program must be established.
8. The physician will represent the nurse before management in all professional and administrative matters when expedient.
9. All professional personnel are encouraged to continue their professional advancement and to participate in the activities of their professional associations.

Decontaminating Radioactive Water

THE POSSIBILITY of radioactive contamination of public water supplies from the use of nuclear weapons or from improper disposal of waste from atomic reactor installations, research organizations or hospitals has emphasized investigations of methods of dealing with such contamination.

Removal of radioactive contaminants from water by ion exchange slurry is among the latest of these methods tested by the Sanitary Engineering Branch of the Corps of Engineer's Research and Development Laboratories, Fort Belvoir, Virginia.

The method consists in removing the radioactive contaminants from the water by the addition of commercially available ion exchange resins. Attracted to the resins, the radioactive ions settle out with them after the solution has been agitated.

In the laboratory jar tests conducted by ERDL, the ion exchange resins were added to tap water contaminated with radioactive materials to a level approximating that expected in a water supply after the detonation of a nuclear type bomb.

Tests indicated that under certain conditions the ion exchange batch slurry treatment decontaminates radioactively contaminated water to a level suitable for emergency drinking purposes within 30 minutes. Because equilibrium is reached rapidly in the batch treatment it is faster, although sometimes less efficient, than the column type operation in which ion exchange materials are also used.

Engine Research

(Continued from page 35)

high speeds, 60 percent or more of the supplied fuel may pass through the engine unburned.

2. While idling, some engines allow as much as 25 percent unburned fuel to reach the exhaust pipe without burning, although the over-all average is only about 4 percent.

3. Accelerating or cruising engines expel a minimum of unburned exhaust.

4. The present trend toward automatic transmissions and engines of advanced design is giving motorists a dividend in combustion improvements by reducing unburned hydrocarbons in exhaust gases.

The Wentworth-Daniel paper revealed two general methods for trying to achieve the desired reduction of unburned fuel in the exhaust:

1. Shutting off the fuel temporarily during deceleration, and

2. Enabling a more combustible mixture of air and fuel to reach the cylinders during deceleration.

Devises based on these two principles, they said, achieved sizeable reductions. Although still in the experimental stage, they represent possible solutions of the problem at its sources—in the engine.

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(For details, use Key # C-18 on card on page 75)

inside the trade

Formation of a new company, The Permagile Corporation of America, 300 Fourth Avenue, New York City, to manufacture and sell new type plastic resin compounds, has been announced by Dr. J. A. Neumann, president of the American Agile Corporation, Cleveland, who will likewise head the new firm. The new compounds will be marketed under the name of "Permagile" and will be sold primarily to the building industry and through contractors. They provide among other uses, an effective solution to moisture and seepage problems in buildings and other structures.

The Cambridge Wire Cloth Company, Cambridge, Maryland, has announced that the R. D. Travers Company of Hamilton, Ontario is now distributing Cambridge woven wire conveyor belts, industrial wire cloth, special metal fabrications and gripper woven wire slings throughout the Provinces of Ontario and Quebec. Headquarters for the Quebec operation will be 4917 Rosedale Avenue NDG Montreal 29, Quebec and H. A. Campbell will be in charge. Ontario operations will continue from the present address, 12 Freeman Place, Hamilton, Ontario.

Speedways Conveyors Company, Inc., Buffalo, N. Y. announced the appointment of the Hamerslag Equipment Company, 45 Elmira Street, San Francisco, as exclusive distributors for Speedways materials handling equipment in northern California. Along with Speedways, other Hamerslag lines include other material handling names such as: West Bend Equipment Company, the Ballymore Company, the Aerol Company, Magline, Inc., and Bassick Company.

Medical Supply Company, Rockford, Illinois, announces the appointment of Mr. Richard G. Babbitt to the position of General Sales Manager. Mr. Babbitt has been with the first-aid products company since 1946 in various sales capacities and assumed his new position on January 1, 1955.

Mr. Richard P. Whitney has been appointed Assistant General Sales Manager, and he has been associated with Medical Supply Company for the past five years, serving in various purchasing and sales capacities.

Three new sales representatives have been appointed by The Colson Corp., Elyria, Ohio, manufacturers of casters, material handling equipment for industry, and wheeled products for institutions, it was announced by Robert A. Pritzker, president. J. J. Wortham has been named Texas branch manager and is in charge of the company's new warehouse and sales office in Dallas and of new branch offices in Houston, Tyler, and Weslaco. R. C. Browne, formerly at the branch sales office in Cincinnati, has been transferred to the new Louisville, Ky., office, and Roy Watson has been appointed to the Toledo branch sales office.

Formation of Wynko Manufacturing Corp., a Tennessee corporation to design, manufacture and sell industrial work clothing of all-Dynel and Dynel-blended fabrics, has been announced by R. J. Kohn, president, at the new firm's national sales headquarters, 175 Main Street, White Plains, N. Y. The firm will utilize the manufacturing facilities of Southern Athletic Company, widely known as one of the nation's largest manufacturers of athletic clothes. For the present, the new company will concentrate on chemically resistant work garments made of a new spun-dyed All-Dynel fabric. In the near future, this line will be supplemented by garments of blend fabrics combining Dynel with cotton and other fibers.

Pittsburgh Plate Glass Co. has announced the appointment of William J. Miller as manager of its newly-created unit, Safety Glass Replacement Sales. With the new unit, the firm's Plate Glass Sales Department establishes a liaison between jobbing accounts, company merchandising branches, the general office and the company's windshield glass manufacturing plant now under construction at Greensburg, Pa. Mr. Miller has been associated with Pittsburgh Plate Glass for the past ten years and a member of Plate Glass Sales since 1952.

Solar Electric Corp. of Warren, Pa., announces the appointment of Mr. F. Leslie Watson as Vice President in Charge of Sales. He will make his headquarters at 501 Fifth Ave., New York 17, N. Y., and will be in charge of all sales activities of the company, which includes promotion, representative agencies, direct sales, industrial sales and advertising.

Script-Oil Laboratories, manufacturer of hand cleaners and until recently known as Lixoil Laboratories, has announced a change of address. The firm is now located at 143 Federal St., Boston 10, Mass.

ALL THE SAFETY OF A STAIR
For specifications and prices on the complete line of Ballymore Safety Step Ladders, send for free catalog. Ballymore Company, Wayne, 18, Pa.
Ballymore
SAFETY LADDERS
BALLYMORE SAFETY STEP LADDERS
(For details, use Key # C-22 on card on page 75)

Dr. Joseph Silverman has been promoted to head of the Research Department, Laboratory Division for Walter Kidde Nuclear Laboratories, Inc., it was announced by Dr. Philip Miller, Laboratory Director. The Laboratories are engaged in research for the design of nuclear power plants and the application of nuclear technology to industrial problems.

Promotion of Robert C. Olney to eastern regional sales manager of commercial trades, reflective products division, has been announced by Minnesota Mining & Manufacturing Co. His headquarters will be in the division's new reflective products sales office and display room in the First National Bank Building in Chicago.

Mr. W. E. Tromanhauser, President of the Buffalo Fire Appliance Corporation, of Dayton, Ohio, has announced the appointment of George H. Boucher as Vice President. Mr. Boucher was associated with the Pyrene Mfg. Co. for many years and played an important part in developing and establishing its distributing organization. He will assist in developing, increasing and broadening the Buffalo Fire Appliance sales outlets.

William L. Krapf, Manager of Bulkley, Dunton Processes, Inc. of New York, N. Y. has announced the appointment of Jean Paul Rolland of Montreal and Charles E. Napier Company, Ltd., of Toronto, as the firm's representatives in Canada. The New York firm, manufacturers of separators for the clarification of waste and process waters for industrial and commercial uses, made the move as part of a planned program to give more intensive sales and service coverage to Canadian industry.

Robinson Aviation, Inc., vibration and shock control engineers, Teterboro, New Jersey, announces the appointment of a new manufacturer's representative to provide engineering service for Robinson's Airborne and Industrial Divisions. The J. M. Walthew Co., Boeing Field, Seattle 8, Wash. will represent the company in the States of Washington, Oregon, Idaho and Montana.

According to an announcement by M. Nielsen, vice president in charge of The Babcock & Wilcox Company's Boiler Division, a new department has been formed to consolidate the contract and erection phases of the division's operations. The new department, to be known as Contract and Erection, will be located in a new office building soon to be built near the company's plant in Barberton, Ohio. Laurence W. Hayward, former assistant chief engineer of the division, had been named manager of the new department. R. W. Fox, contract manager and J. P. Craven, erection superintendent will continue to be in charge of these respective functions, under Mr. Hayward.

The Cambridge Wire Cloth Co. announces the appointment of Richard Roche as Personnel Director. Mr. Roche has been associated with the Cambridge Wire Cloth Company for the past fourteen years, serving in a number of capacities. He was closely associated with the Woven Wire Conveyor Belt Dept. for nine years, acted as Safety Director, Supv. of Inventory and Receiving for the past five years, and also supervised the First Aid Department.

Mr. Francis D. Holden has been appointed Manager of Sales of Macwhyte Company. The announcement was made by Mr. R. P. Tyler, Vice President in Charge of Sales. Mr. Holden has been Assistant General Sales Manager since December 1, 1948.

Simpkins suffered from heat fatigue–and his work was extremely poor.

Now Morton Impregnated Salt Tablets help Simpkins work fast and sure.

You can hold down accidents caused by heat fatigue

Complies with Federal Specifications SS-S-31e for Type III, Class C Impregnated Salt Tablets

U. S. Patent No. 2,665,236
Patented 1954 (Canada) No. 501,316

Be sure you have plenty of Morton Yellow Impregnated Salt Tablets handy. Their controlled dissolving action gives *immediate* relief *without causing nausea.*

Essential body salt lost through perspiring is immediately replaced, but at a gradual rate. Your employees feel better, work better more safely, when they take Morton Yellow Impregnated Salt Tablets.

Morton Yellow Impregnated Salt Tablets come in a handy disposable dispenser. Plastic and heavy-duty aluminum dispensers are also available, as are plain salt tablets.

Place your order this week with your local safety equipment distributor. If he cannot supply you, write.

MORTON SALT COMPANY
Dept. SM-3, 120 S. LaSalle St., Chicago 3, Ill.

(For details, use Key # C-20 on card on page 75)

Simplified Practice for Pipes and Ducts

PRINTED COPIES of Simplified Practice Recommendation R207-54, Pipes, Ducts, and Fittings for Warm-Air Heating and Air Conditioning, are now available, the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, reports.

The recommendation consists of a simplified list of pipes, ducts, and fittings for warm-air heating and air conditioning for gravity, forced air extended plenum, and perimeter systems as well as sketches which are intended as an aid to identification of the items listed.

Printed copies of Simplified Practice Recommendation R207-54 may be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., or from any Department field office, for 10 cents a copy. A discount of 25 percent will be allowed on orders of 100 or more copies.

Metal Failures

"MECHANICAL *Failures of Metals in Service*," by John A. Bennett and G. Willard Quick, has been published by the National Bureau of Standards. Designated as Circular 550, it is available for 30 cents from the Government Printing Office, Washington 25, D. C.

For many years the National Bureau of Standards has been requested to examine metal parts that have failed in service for evidence bearing on the causes of these failures. The examinations have been undertaken at the request of other Government agencies such as the Civil Aeronautics Board, the Interstate Commerce Commission, and the Coast Guard.

This circular describes 35 such cases representing the most frequently observed types of failures. The factors of design, fabrication, or use contributing to these failures are presented. The characteristics by which the various types of fractures can be recognized are discussed, and recommended precautions that should be observed to reduce mechanical failures of metals in service are included. The volume is well illustrated with photographs of the failures discussed along with photomicrographs showing sources of failure.

Progress of Standards

HOW MANY employers measure hearing loss due to noise in industry? These and other questions of interest to safety engineers, industrialists and others concerned with human safety are answered in the published proceedings of the Fifth National Conference on Standards, held last fall.

The 100-page volume is entitled, "Standards for a Strong America." It contains 40 papers on a wide range of subjects, including safety, international standards and world trade, company standardization, purchasing, architecture, quality control, agriculture, color TV, forecasts by technical and business paper editors, and ASA Annual Meeting and Award Ceremony addresses. Now available from the American Standards Association, 70 East 45 Street, New York 17, at $3.00 per copy.

Materials for Product Development

HUNDREDS of problems facing product designers in their selection of materials are discussed in "Materials for Product Development—1954" which has been published by Clapp & Poliak, Inc., New York. The book, the second of a series, contains the proceedings of the Basic Materials Conference, held in Chicago last May.

Six basic problems were under consideration. These were "Materials of the Future"; "New Metal Forming Processes," such as precision castings, powder metallurgy, forging, extrusion and stamping; "Non-Metallic Materials," including plastics, carbon-graphite, ceramics and glass; "Joining," with emphasis on adhesives and adhesive bonding of metals and plastics; "Corrosion Protection," and "Materials Management," a description of how to set up and operate a materials department.

In addition to the text of the papers presented by 13 speakers, the book contains 27 illustrations, tables and diagrams. One of the highlights is the inclusion of 258 questions and answers presented at the meetings.

Clapp & Poliak, producers of the conference and the concurrent Basic Materials Exposition, send the book without charge to all who attended the conference. Others may purchase the volume, postpaid for $7.50, by writing the publishers at 341 Madison Ave., New York 17, N. Y. The book is cloth-bound and contains 160 pages.

Dosimetry Handbook

A NEW handbook, "Photographic Dosimetry of X- and Gamma Rays," by Margaret Ehrlich, (National Bureau of Standards Handbook 57) contains primary factual data and basic principles necessary for photographic dosimetry of X- and gamma rays. It was prepared in response to an urgent need for more complete information on this topic. The data presented in the handbook

are the results of an extensive program in this field conducted over a number of years by the Radiation Physics Laboratory of the National Bureau of Standards.

Most of the information presented is concerned with the use of commercial photographic film for X- and gamma-ray dosimetry. Emphasis is placed on those properties of photographic emulsions that are basic to radiation dosimetry. Likewise, attention is called to limitations inherent in the methods and materials and to precautions that should be observed. Because considerable flexibility in techniques and procedures of film dosimetry is possible without appreciable effect on the end result, no attempt is made to specify all of the details uniquely.

Copies can be obtained from the Government Printing Office, Washington 25, D. C. for 15 cents per copy. Foreign remittances must be in U. S. exchange and should include an additional one-third of the publication price to cover mailing costs.

Hot Line Manual

THE PUBLICATION of "Hot Sticks," complete descriptive manual on high voltage line maintenance written by O. G. Anderson, Hot Line Tool Specialist, D. C. Hubbard, Chief Engineer of Hot Line Tools, and H. A. Houston, Advertising and Sales Promotion Manager, is announced by the A. B. Chance Company. Many suggestions were contributed by men throughout the electrical industry for the format and contents of the manual.

The 162-page book contains sections on care of hot line tools, training hot stick crews, operation of principal hot line tools, and 21 basic hot line tool jobs with a step-by-step procedure. These jobs include insulator, cross arm and pole changes on straight line, dead end, running corner and suspension construction. Voltage ratings of the job procedures range from 5 kv up to 287 kv. All jobs are completely illustrated so that the job steps can also be followed pictorially.

Copies of the manual may be purchased for $2.50 each by ordering from the Advertising Department of the A. B. Chance Company, Centralia, Missouri.

Building Equipment

THE THIRD edition of "Mechanical and Electrical Equipment for Buildings" has been published by John Wiley & Sons. Written by Charles M. Gay, Charles De Van Fawcett, and William J. McGuinness, the book provides a basic guide to design, specifications, installation, operation, and maintenance of the more important types of machinery, acoustical materials, and supporting media.

The revised standards and procedures of the last ten years have involved extensive changes in both the mechanical and electrical discus-

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with HOOD ANTI-SLIP GLOVES

CHECK THESE FEATURES -
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Natural Rubber Coated Palm with Anti-Slip Finish
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Standard Weight
Flexible — Comfortable

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Also available as R-46, fully coated with natural rubber.

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A division of the B. F. Goodrich Company
(For details, use Key # C-21 on card on page 75)

sions. On the mechanical side, there is now an entirely new chapter on radiant heating, and up-to-date information on pumps, baseboard and forced warm air heating, zoning systems and controls for hot water heating, and the Metro system of steam heating. The modernized electrical material incorporates the latest details on elevators and escalators, a-c and d-c theory, and underfloor duct systems. To help further in solving layout problems and assign typical floor space and ceiling elevations, important dimensions and weights of equipment are now provided. These and other points combine to offer a fruitful working source for architects, building owners and managers, contractors, maintenance men, and all those concerned with keeping buildings on a par with modern requirements.

The third edition of "Mechanical and Electrical Equipment for Buildings" contains 564 pages and is priced at $8.50. It is available from John Wiley & Sons, Inc., 440 4th Ave., New York 16, N. Y.

Thermal Insulation

A PROPOSED "Simplified Practice Recommendation for Thermal Conductance Factors for Preformed Above-Deck Roof Insulation," has been submitted to manufacturers, distributors, users, and others concerned for comment or acceptance, the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, has reported. The recommendation was proposed by the Insulating Board Institute.

The proposed recommendation provides five standard thermal conductance factors for thermal insulation manufactured and supplied in rigid or semirigid slab or board form, fibrous or cellular structure of organic or inorganic composition. The thickness of a particular insulating material required for each standard factor is readily obtained by the application of a simple formula or from a diagram which shows the relationship between the thickness and thermal conductivity for each conductance factor.

Meeting Specifications

In the opinion of the proponents, the general adoption of this recommendation will make it easier for the owner, the architect, or the engineer to specify the insulation value he seeks; easier for the general contractor and roofing contractor to follow the specifications as written, and will result in economic standardization at the manufacturing level, resulting in less waste.

Mimeographed copies of the proposed recommendation may be obtained from the Commodity Standards Division, Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.

OVER-LOOKING A HAZARD?

You are if you are undersignalled!

All hazardous places or operations can't be eliminated, but their existence can be identified and pinpointed with an audible or visible warning signal.

A small investment in a FEDERAL Beacon Ray light, siren, horn or bell can save a life, avoid a painful injury or prevent a mechanical failure. One such saving, translated into dollars and cents may be the difference between business success and failure.

FEDERAL offers the most extensive variety of safety signals.

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(Use Key # C-19 on Inquiry Card on page 75)

SEND THIS PERSONAL SAFETY MESSAGE

TO EVERY ONE OF YOUR EMPLOYEES!

Safety is made attractive...vivid...colorful...

each worker clearly sees how safety benefits him.

You get enthusiastic safety cooperation instead of

tolerance...from every employee...every month.

YOUR
Safety News
PUBLISHED IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
PROTECT YOURSELF
3
WAYS
There are three safe practice ways that do the most good in keeping free of accidents, all based on your personal desire to know safety and keep yourself safety-minded by studying the hazards of your work They are
1 Make sure all guards are in place and working and wear the personal protective equipment your job requires
2 Learn the safe way to do a job and do it just that way.
3 Report, avoid or eliminate all unsafe conditions.
As we see it: Safety is part of every job and like any craft it requires skill.
John Doe

Size 5½" wide x 8½" deep

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Full of color, pictures, humor and snap, it make safety interesting and down-to-earth. 12 time a year it covers every accident hazard. Natio wide, leading industrial firms state it's the on *safety paper their employees will read* . . . an take home to their families.

It gives you the advantages of personal co tact, saving time and money. When it preven one Lost Time accident, it has more than pai its cost for the year. Try it . . . it works!

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makes YOUR SAFETY NEWS your own publication . . . a good-will ambassador . . . another force for better industrial relations.

Every employee feels bucked by a note from the boss. If you sire, your facsimile signature be printed here.

Your Signature Here

NOTE:
Your Safety News is designed to promot better employer-employee relations. Ever item is carefully weighed from this viewpoint

NSIDE PAGES

(pages 2 and 3)

Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
In the old time lion tamer's act it was everyone's opinion that the lion had no teeth and to make him sound and act ferocious they had to twist his tail.
That machine you are operating can be just as ferocious as any jungle cat, licking its chops, waiting to snap up that loose necktie, loose fitting clothing or rolled up sleeves, and you don't have to twist his tail to get him mad either. But, he will respect you if you have trained for the Safety act.
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
from the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES
WORK OVERTIME
There was a time when Safety Shoes were clumsy and uncomfortable but those days are gone forever. Today the Safety Shoe manufacturers offer hundreds of different styles and lasts to meet safety requirements. The modern Safety Shoes look the same as either dress or work shoes of any make, differing only in the addition of two ounces of steel toes.
Dress for Safety
SAFETY SHOES
Well fitted Safety Shoes now are good for on or off the job use. In fact many of us never wear anything else.
Ted: "My feet burn like blazes. Do you think a mustard bath would help?"
Ned: "Sure! There's nothing like a little mustard on hot dogs."
Be bold in what you stand for but careful in what you fall for.
Most of our troubles are caused by too much bone in the head and not enough in the back.
We think the temperament of women could be improved 100 percent if they'd wear comfortable shoes.
FALLS
Falls are the second greatest cause of injuries in industry and a source of many severe cases. It is those two-level falls that really do the damage.
You can't be too careful when working with or on ladders—scaffolds—ramps—stairs or any elevation. You are just plain lucky if you don't break bones from bad falls of this kind.
Slippery surfaces, loose objects, defective, rough and uneven floors cause about half of the falls. These falls are bad enough but usually not as serious.
Never clutter up stairs or aisles. Help keep them free of tripping hazards and you may save some one from a bad fall. Maybe yourself.
FALLS KILL 60 EVERY DAY

YOUR EMPLOYEE'S INTEREST

Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

OCK-FULL OF ILLUSTRATIONS

Artwork is carefully chosen to lodge home each point. The cartoon style makes YOUR SAFETY NEWS as familiar and as welcome as the Sunday supplement.

E "FOLKSY" APPROACH

Keeping the contents folksy, adding the grace note of humor, delivers your safety message with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of tolerance.

'ID COLOR

Generous use of color gives sparkle, adds to the attention-riveting qualities of YOUR SAFETY NEWS. Each issue is as lively as any news-stand favorite.

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YOUR SAFETY NEWS may be ordered with either the Standard imprint or with your Own Special Imprint. The Standard Imprint reads PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER.

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INDUSTRIAL BOOT
With or without steeltoe, black ribbed leg boot with DURATEST non-skid design outsole.
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BEACON FALLS RUBBER FOOTWEAR, BEACON FALLS, CONNECTICUT

(For details, use Key # C-23 on card on page 75)

The New Standards

There are now 1440 American Standards in use in the United States according to the annual report of the American Standards Association.

The number of American Standards approved in 1954, was 152, according to Vice Admiral George F. Hussey, Jr., USN (ret), managing director. Of these, 64 were new standards, 88 were revisions. The greatest number of new standards was in the electrical field.

Admiral Hussey reported that there are 200 national committees composed of experts in engineering, safety, consumer, manufacturing and various other fields, now working on standards projects. The personnel on these committees are appointed by various technical societies, trade associations and other interested organized groups. American Standards are products of all these groups.

In addition, some standards, long in use by established technical societies, trade associations, and sometimes, companies, are also submitted to the American Standards Association for approval as American Standards.

One of the most outstanding standards approved for the year was for transformers which was estimated by the committee chairman to save $100,000,000 in the next three years.

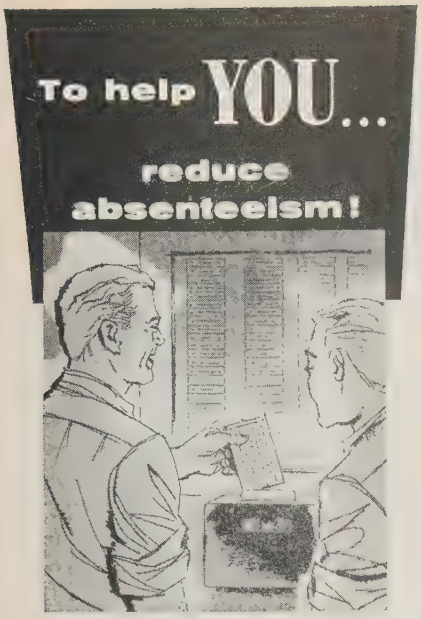
Accident Rates

A document which may affect every American business or industry is the American Standard method of recording and measuring injuries received at work. The Bureau of Labor Statistics has put the standard into effect for compiling accident statistics. The National Safety Council, co-sponsors of the standard with the Accident Prevention Department of the Association of Casualty and Surety Companies put the new standard into effect January 1, 1955, and urged all industrial concerns to do the same. Requests for 20,000 copies of the standard have already been received from industry.

Last year was the first time there have been standards approved for office equipment, Admiral Hussey reported. Seven standards in this field for 1954, he pointed out, indicates a new trend.

"There are multitudes of savings in money, time, efficiency and comfort never touched upon, which office managers, purchasing men and other executives have wanted something done about for a long time," he said, "and standards will be able to accomplish many of these savings."

"Electrical engineers will find it easier to speak the same language. The American Standard Graphical Symbols for Electrical Diagrams has just been revised, employing symbols familiar to the majority of engineers. Coordination of these symbols with international standards was carried out through the International Electrotechnical Commission."



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Safe conduct reduces accidents, which in turn gives you more manpower, less lost time. These, in turn, reduce your insurance rates.

Safety emblems, designed for your particular use or program, become a symbol of cooperative 'thanks' through public recognition of your employees' capabilities and loyalty.

Establish a Safety Awards program today. Our free brochure will give you all of the necessary information, and our representative will call to help clarify details. There is no charge for this service or of the service of our expert design department who will create an awards emblem that will immediately identify your product and symbol.

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(Use Key # C-24 on Inquiry Card on page 75)

"What's the Law?"

Edited by
HENRY M. GROSMAN
Counsellor at Law, Newark, N. J.

Master Superior Court, New Jersey
Member
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
Newark, N. J.

• • •

Not An Employee

THE PETITIONER WAS a trustee of a church. The trustees decided to build an addition to the church which would be paid for by subscriptions. They also provided that anyone who subscribed could work on building the addition and receive a credit of 1 dollar and a half per hour against his subscription. The petitioner subscribed and was injured performing carpentry work on the addition.

The petitioner claimed the relationship of employer-employee existed and that he was entitled to recover compensation under the Workmen's Compensation Act.

The name of the petitioner was not carried on the records of the church as an employee, and there was no evidence that his name was given to the insurance carrier as an employee.

In affirming the determination of the Workmen's Compensation Bureau that no employer-employee relationship existed, the County Courts pointed out that: the church paid no income, social security or unemployment tax in connection with the petitioner.

The work which the petitioner performed was voluntary and he did not perform services for the Church for financial consideration as contemplated by the Workmen's Compensation statute.

The petitioner claimed that the Workmen's Compensation policy covered him since it was the intent of the trustees to have the policy cover subscribers who performed labor on the building. The Court, however, disposed of this contention on the ground that it is not the intention of the parties that brings about the employer-employee relationship under the Workmen's Compensation Act, but rather the relationship created within the meaning of the Workmen's Compensation Act.

ARMITAGE VS. TRUSTEES OF MT. FERN M. E. CHURCH
Decided December 22, 1954, Morris County Court of New Jersey.

Personal Act

DECEDENT WAS A tax consultant, who was required to take extended trips, at which time he was accompanied by a supervisor.

On October 2, 1952, the decedent was required to take a business trip to Miami at which time the supervisor, who accompanied him, made all the arrangements. On October 5, 1952, Sunday, the work was completed. The supervisor, however, had made the plane reservations for October 6th, and so the supervisor and the decedent decided to take a boat trip. The boat capsized and the decedent drowned.

The Workmen's Compensation Board disallowed the widow's claim on the ground that the death arose out of a purely personal act, dissociated from his employment.

In reversing this determination, the New York Supreme Court stated the law to be: that when an employee is required to travel to a distant place on the business of his

employer, and is directed to remain at the place for a specified time, his status as an employee continues during the entire trip. Any injury occurring during this period is compensable, so long as the employee, at the time of the injury, was engaged in a reasonable activity.

SCHNEIDER VS. UNITED WHELAN DRUG STORES
New York Supreme Court, Appellate Division, Decided Dec. 16, 1954.

Caddy Hit By Golf Ball On Day Off

THE CUSTOM OF A country club was to permit its caddies to play golf on Mondays. On such a day the petitioner was struck in the eye by a ball being played by another caddy. The Industrial Accident Commission denied compensation.

The California District Court of Appeals in reversing the determination by the Industrial Accident Commission, based its decision on the grounds that the activity had achieved some status as a custom and that the situation was analogous to injuries suffered by employees, who during their lunch hour, customarily engaged in recreational activities.

WINTER VS. INDUSTRIAL ACCIDENT COMMISSION
California District Court of Appeals—Decided November 23, 1954.

N. Y.'s Safety Show

ELEVEN THOUSAND safety experts from all over the nation will gather in New York for five days of conferences, starting April 11, aimed at reducing this country's annual accident toll of 95,000 lives, nearly ten million disabling injuries and an economic loss of close to nine billion dollars.

New York's 25th annual Safety Convention and Exposition will be held in the Hotel Statler under the sponsorship of the Greater New York Safety Council and 71 cooperating agencies, among which are the Army, Navy, Atomic Energy Commission, Red Cross, the City administration, and business, civic, government and professional groups.

There will be 58 meetings, covering almost all fields of traffic, home, industrial, school and public safety. There will be more than 200 addresses by Federal officials, scientists, local law enforcement officials, safety engineers, educators and industrial executives. In observance of the Silver Anniversary safety convention, this City will officially observe "Greater Safety Week" in welcome to the accident prevention workers and to emphasize individual responsibility in avoiding accidents.

In conjunction with the convention the Safety Council will hold an exposition of the latest developments in safety devices, demonstrations of psychophysical tests for motorists and other aids to accident reduction. There will be 150 displays, topping the previous record of 118.

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DUST PROOFING
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YOU NEED . . .
DUPOR No. 1
The miniature nose mask that is as handy as a pair of glasses. So light, less than 1 ounce. So convenient it can be worn while smoking, eating, talking. Amazing 9 sq. in. filter. Vest pocket size. Can be carried, ready for use instantly. Write for details! Send $1.20 today for sample!
H. S. COVER, SOUTH BEND, IND.
"Respirators for Industry since 1894"
(For details, use Key # C-25 on card on page 75)

Highway Safety Film

A CHALLENGING and dramatic new film on highway safety, "The Perfect Crime," has just been released by Caterpillar Tractor Co., Peoria, Ill., through its local dealers. The 20-minute, sound-color film is presented with the cooperation of the National Safety Council's Construction Section and members of the Associated General Contractors of America. The film was produced by Calvin Company of Kansas City, Mo.

"The Perfect Crime" opens with a double murder in a $14 robbery. Public indignation is aroused and the murderer is rapidly apprehended. Then the narrator deftly draws the comparison with another crime—murder on the highways—and cites an apathetic public for its indifference to this tragedy.

Motorists are admonished in "The Perfect Crime," but not necessarily for their driving habits. The viewer is not told he is responsible for the maiming and murder, but there is no question that there is a responsibility and the viewer can accept or reject the blame. This responsibility is legislation which will give the motorist a safe highway system and the election of alert public officials.

Showings of "The Perfect Crime" which is cleared for television, may be arranged with the nearest Caterpillar dealer or by writing Sales Promotion Department, Caterpillar Tractor Co., Peoria 8, Ill.

Film Festival

ONE OF THE highlights of the forthcoming American Film Assembly, to be held April 4–8 at the Waldorf-Astoria in New York City, will be the showing of outstanding 16mm films. Called the "Golden Reel Film Festival," films will be shown in 25 subject categories. In the general category on "Safety" will be subdivisions on: driver education, fire safety, life saving, accident prevention, safety devices and measures, and safety education.

Another category of interest to the industrial field is "Industrial Processes," which will include: factory management, industrial efficiency, inventions, job analysis, machinery, manufacturing methods and procedures, and research. Among the other general subjects of these informational films are: health and hygiene, human relations, medical sciences, mental health, recreation, sales and promotion, and science.

Professional juries will determine the best film in each category. The general public is invited to all screenings. Persons interested in special categories may register for one day only and attend those films which interest them. Full details may be obtained from: American Film Assembly, Film Council of America, 600 Davis St., Evanston, Ill.

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In Canada: Safety Supply Co., Toronto
EXTRA-HEAVY COATING FOR EXTRA LONG WEAR . . . and greater palm comfort.
NO SEAM HERE TO RIP OUT . . . Wing thumb (one-piece palm and thumb) construction for multiplied service life.
(For details, use Key # C-26 on card on page 75)

Film on Carelessness

A NEWLY produced safety film, "It Didn't Have to Happen," has been given the award of merit of the National Committee on Films for Safety as one of the "outstanding occupational safety films of the year." With dramatic impact it illustrates how the careless or the over-confident woodworking employee who scorns the use of guards and safety devices on today's machines endangers not only his own life, but those of fellow workers.

This realistic portrayal of the careless worker and the tragedy he brought into his factory could happen in any plant where machinery plays a part with the workers.

This prize-winning film was produced by Crawley Films for the Industrial Accident Prevention Associations of Ontario. Sales prints in 16mm size, with a running time of 13 minutes, are available to buyers (outside Canada) from International Film Bureau Inc., 57 East Jackson Blvd., Chicago 4, Illinois. (Sale price is $75.)

Pallet Standardization

WORK OF Committee B-69, the Pallet Standardization Committee of the American Standards Association, has been further advanced with the appointment of J. E. Wiltrakis, Western Electric Co., New York, as chairman of the Technical Committee. Wiltrakis is charged with establishment of five sub-committees, named to cover definitions, surveys, materials, testing and sizes.

Preliminary meetings of the Project Committee included the September 28th meeting of the Steering Committee, Congress Hotel, Chicago, and the Main Sectional Committee meeting, September 29, at the Morrison Hotel, Chicago.

The Project has administrative co-sponsorship by the Society of Industrial Packaging and Materials Handling Engineers and the American Society of Mechanical Engineers.

SAFETY FIRST — BE — CAREFUL
NOTICE THESE DOORS MUST BE KEPT CLOSED
BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
HELP KEEP THIS PLACE CLEAN
THINK ACCIDENTS ARE AVOIDABLE FORGET THE ALIBI.
EXIT
DANGER — NO — SMOKING
WARNING CURRENT —ON—
CAUTION KEEP AISLES CLEAR

Whether it's
SAFETY SIGNS—

SARGENT-SOWELL CAN SUPPLY THEM ALL

Write for Illustrated Folder . . . in full Color.

More than 5,750 different Standard Signs in stock.

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Experience
Sargent-Sowell is nationally known for dependability and quality in suppling every sign need.

Specialization
Sargent-Sowell specializes in all types of standard signs — Industrial, Municipal, Construction, Plastic, etc.

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Sargent-Sowell maintains a complete inventory of more than 5,750 different standard signs for immediate delivery.

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Sargent-Sowell will supply you quality signs for less money.

SPECIAL PURPOSE SIGNS

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1211 E. JEFFERSON, P. O. BOX 1176
GRAND PRAIRIE, TEXAS
SATISFACTION GUARANTEED OR YOUR MONEY REFUNDED

(For details, use Key # C-27 on card on page 75)

Sanitation Clinics

THE COMPLETE schedule of dates for the series of clinics on organizing a sanitation program based on work standards, that are being held in various cities throughout the country, has been announced. (An article on the subject matter for these clinics was published in the December, 1954, issue of "Safety Maintenance," page 15.)

The one-day clinics have been running for about a month. The remainder of the schedule follows (Numbers indicate day of month):

MARCH—2, Minneapolis; 5, St. Louis; 7, Indianapolis; 9, Columbus; 11, Cincinnati; 28, Kansas City; 30, Omaha.

APRIL—1, Denver; 4, Salt Lake City; 11, Seattle; 13, Portland; 18, San Francisco; 20, Los Angeles; 22, Phoenix; 25, Oklahoma City; 27, Fort Worth; 29, Houston.

MAY—2, New Orleans; 5, Miami; 9, Jacksonville; 11, Atlanta.

Full details about the sanitation clinics may be obtained by writing to: Cost Control Clinics, P. O. Box 25, Crescent Hill Station, Louisville 6, Ky.

ALL TYPES...ANY CLASS FIRE!

Since different fire hazards require different types of fire extinguishers, PYRENE—C-O-TWO manufactures all types . . . the finest and most complete line on the market today.

When doing business with PYRENE—C-O-TWO, you receive unbiased advice on what is best for your particular fire hazards, whether class A, B or C. Also, there is a well-rounded sales engineering organization having nation-wide representation to render top quality service wherever you're located.

Don't take unnecessary chances . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts now!

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Sales and Service in the Principal Cities of United States and Canada

COMPLETE FIRE PROTECTION

portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

(For details, use Key # C-28 on card on page 75)

The Fire Front

Heating Insulation

FIRE RECORDS indicate that about 10 percent of the total fire loss of the United States is caused by heating equipments, and that insufficient clearance to combustible materials is an important factor in a large percentage of these fires. The need for adequate clearances is emphasized at periods of severe cold weather by a marked increase in the number of such fires, according to a bulletin of the National Board of Fire Underwriters.

In making inspections of buildings one of the fundamentals which should be borne in mind is that every device which gives off heat may be a source of fire hazard if combustible materials are not kept a sufficient distance from the device or are not protected to eliminate the possibility of their becoming ignited. The amount of clearance, or the amount of clearance in combination with whatever protection is applied to the combustible material, must be such that the temperature to which the combustible material will be raised will not exceed the same temperature limit for that material. The amount of clearance, degree of protection, or combination of these which will be necessary will depend to a great extent upon the device. For example, consider the question of clearances for stoves of various kinds.

Types of Heaters

One type of heating stove, not so commonly used now as in years past, is arranged so that the fire is directly against the cast iron or sheet metal forming the outer surface of the stove. Because the outer surface of these stoves normally gets very hot, sometimes red hot, a clearance on all sides to combustible material (such as woodwork and including wood stud partitions) of not less than 36 inches should be provided. A more modern type of heating stove has an outer casing of sheet metal arranged for circulation of air between the part enclosing the fire and the outer casing. Circulating type space heaters radiate much less heat than stoves without the outer casing. For such heaters a minimum clearance of 12 inches on all sides to combustible material should be provided. In each of the above cases, the clearance may be reduced one-half if the combustible partition is protected by a shield of metal or other noncombustible material, so attached as to preserve an open air space behind it.

Masonry Poor Insulator

Devices which are run continuously at a high heat need special attention. In one case, piles of paper stock on a floor of tile and concrete 12 inches thick were ignited by the heat from high pressure boilers on

Annual Fire Losses

FIRE damaged or destroyed an estimated $870,984,000 worth of property in the United States last year (1954), according to the National Board of Fire Underwriters. This is 3.6 percent less than that for 1953, when estimated monthly losses totaled $903,400,000, which included one large industrial loss in August of 1953.

Estimated losses for December (1954) totaled $83,881,000, an increase of 36 percent over losses of $61,663,000 reported for November and an increase also of 0.5 percent over losses of $83,440,000 reported for December, 1953.

These estimated insured losses include an allowance for uninsured and unreported losses.

Month	1954	1953	1952
January	$86,493,000	$76,659,000	$74,155,000
February	78,928,000	72,706,000	69,925,000
March	84,821,000	83,471,000	72,254,000
April	77,933,000	67,362,000	67,380,000
May	62,282,000	64,239,000	62,354,000
June	65,533,000	67,644,000	58,585,000
July	69,532,000	74,938,000	61,675,000
August	78,163,000	107,713,000	56,462,000
September	64,087,000	68,613,000	58,949,000
October	57,668,000	68,551,000	63,958,000
November	61,663,000	68,064,000	65,129,000
December	83,881,000	83,440,000	74,127,000
TOTAL	$870,984,000	$903,400,000	$784,953,000

the floor below, even though the boilers were encased in brick and there was a clear space of 28 inches above them. This fire shows the poor insulating qualities of solid masonry and indicates the need of air circulation to prevent the building up of such high temperatures in walls, floors or ceilings.

Other devices such as incinerators which may only be operated intermittently may also need special attention because of their use for burning paper and other materials which produce a very hot fire, and because they are often overcharged and left without supervision while still in operation.

Boilers

All hot water and low pressure steam heating boilers should be covered with noncombustible insulation. With such insulating coverings, the principal danger to combustible material usually occurs in connection with the smoke pipe, which is also true with warm air furnaces. In one eastern city, where many smoke pipes were found too close to combustible ceilings, a campaign by fire department officials to get greater clearances, where necessary, has been successful in removing many fire hazards. Where other methods could not be used, it was found that for a small cost the chimney opening for the smoke pipe could be lowered the necessary amount.

Wood Temperature

Long continued heating at temperatures as low as 212 Fahrenheit may produce ignition of wood under favorable circumstances. To provide some factor of safety, temperatures on woodwork should be kept somewhat lower than 212 F. In testing fuel-burning heating devices, it is standard practice to use a rise of 90 F. above test room temperature or approximately 160 to 175 F. as the maximum permissible temperature on surrounding woodwork.

In making fire prevention inspections the checking of clearances by temperature measurements is not feasible; a simple rule which is sometimes useful is that woodwork is not safe if it is too hot for the bare hand, but in the majority of cases the practical thing to do is to see that clearances conform to the ordinances and other requirements which apply. Data on minimum clearances contained in local ordinances may be supplemented by the provisions of the Building Code Standards of the National Board of Fire Underwriters for the Installation of Heat Producing Appliances.

Top Clearance

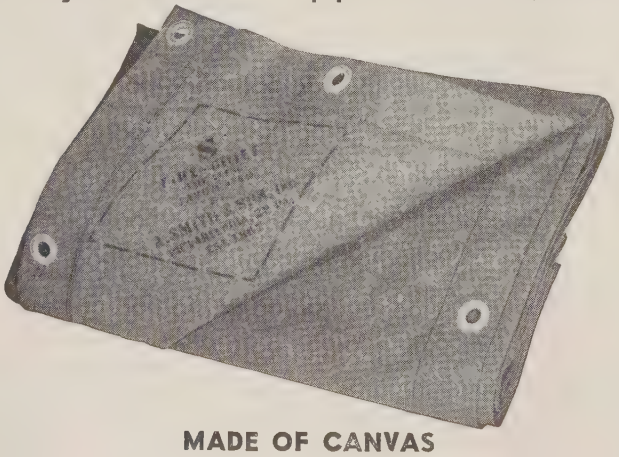
Attention should be given to clearances above heating devices as well as at the front, sides and rear, and to clearances from smoke pipes, range hoods, warm air pipes and registers and steam and hot water pipes, not overlooking any device or apparatus which may give off heat in sufficient quantity to ignite combustible materials.

"Fire-Chief Finished"

WELDING CURTAINS—SALVAGE COVERS

to confine the welding operation to a given area

used to protect machinery, and other equipment from water, dust and snow.



MADE OF CANVAS

impregnated with Hooper's Fire Chief treatment under their patent which carries the Underwriters' Laboratory seal.

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Established Eighteen Hundred Sixty-Seven

MANUFACTURERS OF REEVES STRETCHER

Ridge Ave. at Green — Philadelphia 23

"If It's Made of Canvas, We Make It"

(For details, use Key # C-29 on card on page 75)

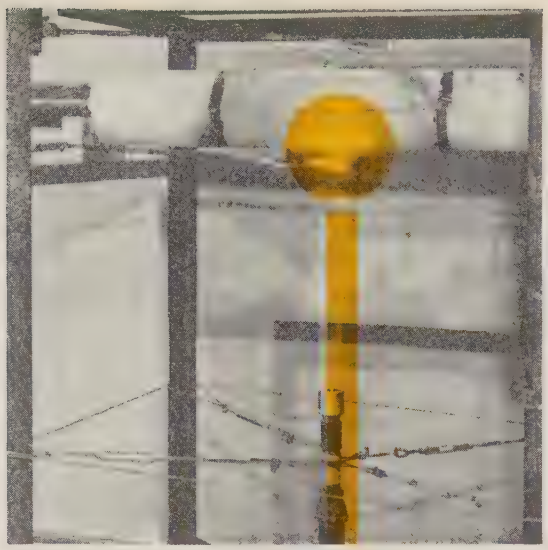
Sprinkler Group Elects

At the annual meeting of the National Automatic Sprinkler and Fire Control Association held in New York, John J. Power, Jr. of Youngstown, Ohio, was elected President and Chairman of the Executive Committee. Mr. Power is Executive Vice President of the Automatic Sprinkler Corporation of America.

Frank J. Fee, Jr. of Mount Vernon, N. Y., was named First Vice-President and Vice-Chairman of the Executive Committee.

Other officers re-elected at the meeting were Ray B. Heath of Worcester, Mass., Second Vice-President and A. G. Woelfel of Ridgefield, New Jersey, Secretary-Treasurer.

TEST SHOWED MAGNESIA INSULATION WORKS

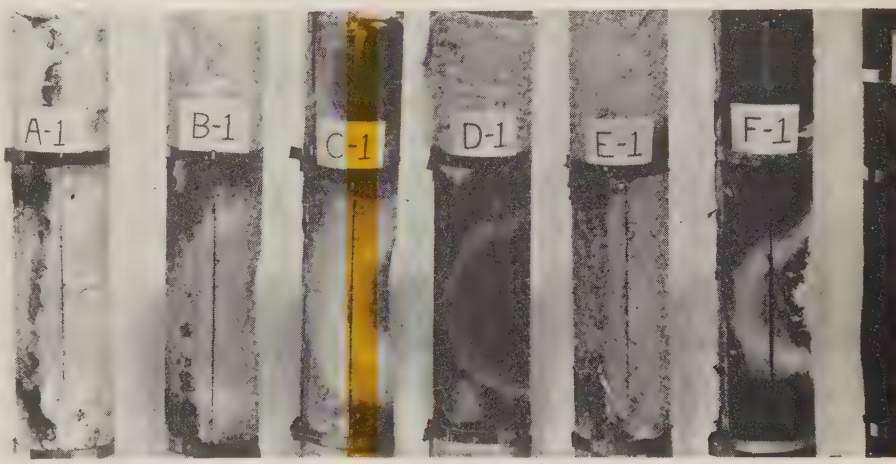


Magnesia insulation is almost completely enveloped by 2000 degree flame in fire test (left). After 30 minutes in flame test samples looked like this (below). Sample at left of picture, 85 percent magnesia, is undamaged.

FIRE TESTS CARRIED out with 85 percent magnesia thermal insulation demonstrate that the material will withstand a 2000 F flame for an extended period without appreciable damage. The tests conducted by the Technical Committee of The Magnesia Insulation Manufacturers Association indicate that the insulation is capable of protecting pipes and equipment and their contents under average fire conditions.

The insulation, applied to a section of steel pipe by standard methods, showed no damage beyond slight surface cracks after 2 hours in the intensely hot flame. Temperature on the surface of the insulated test pipe was below 600 F. The results indicate that 85 percent magnesia would remain intact and would protect pipe lines, flues, ducts and other equipment from fire damage. During a plant fire it would also prevent sudden temperature rise of the contents of the pipes and vessels.

The tests showed further that 85 percent magnesia insulation resists fire damage equally well when covered with canvas, galvanized steel, aluminum, or various asphaltic jackets. However, the type of jacket did not have any marked effect on the amount of heat transmitted through the insulation to the pipe surface, although somewhat lower



. . . SO DID FIRE!

Fire tests were confirmed by spectacular blaze (above). Magnesia insulated equipment resisted fire excellently.

temperatures were recorded for the canvas-covered samples.

As a basis for comparison, 6 other commercial types of thermal insulation generally used for the same service were tested under identical conditions. In its summary of results, the Association's technical committee said that canvas-covered 85 percent magnesia showed superior resistance to the hot flame. While jacketing other than canvas improved the performance of the other types of insulation tested, 85 percent magnesia performed about equally well under all conditions.

Testing Set-Up and Procedure

The tests were carried out with empty 6-foot lengths of 3-inch standard steel pipe covered with one inch of insulation. Chromel-alumel thermocouples cemented at the top and bottom of the pipe under the insulation showed the amount of temperature increase at the pipe surface. The pipe was supported horizontally in a test stand about 10 inches above the orifice of a burner firing a mixture of compressed air and manufactured gas.

Temperature readings from top and bottom pipe surfaces during all tests were recorded at intervals until the bottom surface reached 1000 F, taken as the point of insulation failure. If this temperature was not attained, the test was concluded after 2 hours.

The Association reported that at the end of the two-hour period the pipe insulated with canvas-jacketed 1-inch thick 85 percent magnesia showed a bottom pipe surface temperature of 593 F and a top surface temperature of 501 F. This was the lowest pair of temperature readings noted.

Pictures by courtesy of Magnesia Insulation Manufacturers Association.

Floor Fire Tests

A new publication, "Fire Endurance of Open-Web Steel-Joist Floors With Concrete Slabs and Gypsum Ceilings," by James V. Ryan and Edward W. Bender (National Bureau of Standards Building Materials and Structures Report 141) describes fire resistance tests on a number of floor constructions which are typical of those suitable for use in homes, apartments, stores, and office buildings. The results reported will be useful to building and code officials as well as architects and engineers concerned with the selection of ceiling constructions for application below steel joist floors for the purpose of providing varying degrees of fire resistance to the structure.

The results obtained in a program of 18 fire tests on open-web steel-joist floors are presented; 16 of these were protected by ceilings of gypsum-perlite plaster on gypsum lath "furred" directly to the joists. Variables included plaster thickness, plaster mixes, spacing of furring channels, system of lath clips, reinforcing in the ceilings, and type of floor slab. An acoustical plaster finish was applied to one ceiling. The range of fire endurances obtained, from 1 hour to 4 hours 26 minutes, was sufficient to cover the requirements for floors in many building codes. The importance of the ceiling's protective function was demonstrated in two tests without ceilings, in each of which failure occurred at 7 minutes.

Copies can be obtained from the Government Printing Office, Washington 25, D. C. The price is 20 cents per copy. Foreign remittances must be in U. S. exchange and should include an additional one-third of the publication price to cover mailing costs.

Tank Truck Cleaning

Publication of a new edition of a safety manual on how to clean tank vehicles used for the transportation of flammable liquids has been announced by the American Petroleum Institute. The new edition is illustrated, and replaces a tentative manual issued five years ago. It is known as API Accident-Prevention Manual No. 13A. Copies may be obtained through the Institute (50 W. 50th St., New York 20, N. Y.) for $1.00 each. Discounts are allowed on quantities.

The purpose of the manual is to provide information on how to clean, prior to repair, any tank vehicle equipment which is used in the transportation of flammable liquids. Attention is called to the measures which should be taken to protect personnel against harmful vapor concentration and to avoid the ignition of flammable vapors which may be present during certain phases of mobile tank-cleaning operations.

Among the subjects covered are preparation of tank units for repair, repair operations, preparation of tank compartments for gas-freeing, methods for gas-freeing tanks, and precautionary measures for hot work.

FOR SAFETY'S SAKE . . .
DAV-SON FLASHING SAFETY DIRECTOR
With Amazing Changeable Letter Slide Out Panel

Bright traffic light red, green spots flash "SAFETY FIRST." Color, motion, light bring eyes directly to message. Only DAV-SON has changeable letter design with removable panel for quick changes, peak attention. 98 red 3½" and 250 black 1⅞" acetate letters in compartment box incl. Size 18½x29x6. Complete with lamp and U.L. Cord. $39.75

Insist on genuine self-sealing cork back bulletin boards—hardwood frame. Sizes 12x18 and larger. With or without glass doors. $4.15 up. Also with metal frames for inside or outside use.

A Dav-Son board for every purpose. Over 100 different sizes and styles to choose from. *Dealer Inquiries Invited.*

If your dealer doesn't have the Dav-Son board you need write direct.

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(For details, use Key # C-38 on card on page 75)

NEW FIRE-FIGHTING TECHNIQUE

Even though fire has a good start . . .

A NEW TECHNIQUE IN fire-fighting was recently demonstrated successfully, providing initial proof that ember fires in industrial plants, barns, and small homes may be successfully extinguished with only a small amount of water. Fire officials say it will have important civilian defense implications for fighting industrial and home fires where the water supply has been cut off or is short.

The technique that was shown involved an initial attack on a large 60 by 60 foot burning barn with dry chemical fire extinguishers. The chemical—which is specially-treated baking soda—knocked down the flames within 30 seconds, after which water was quickly applied to douse the embers and prevent re-ignition. The test was later repeated against a fire in a small two-room house, and was equally successful.

Chief George Magee, of the Santa Rosa, California Fire Department, who conducted the tests with the aid of engineers from an extinguisher manufacturer, estimates that less than 200 gallons of water was required to complete the extinguishment. This, he says, is perhaps only 1-tenth of what might have been

Dry Chemical knocks it out . . .

And less water prevents rekindling

IT'S NEW! IT'S HERE! IT'S FREE!

The BIG 1955—36 Page Catalog of Industrial Incentives and Awards

is full of proven ideas for merchandise and safety promotion

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GC-11

Two-tone Jewelers bronze etching with Green Cross in enameled colors. Genuine Walnut Shields size 10" x 10½" . . . **$10.95.** Also available Plain or with AWARD OF HONOR HAND ENGRAVING ONLY 6¢ Per Letter.

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(For details, use Key # C-30 on card on page 75)

SCRIPT-OIL

HAND CLEANER

(formerly known as LIXOIL)

Based on a new principle in skin cleansing

Regular Use of SCRIPT-OIL Helps Prevent Many Industrial Skin Diseases.

It should be used in your factory if you have oil eruptions and oil folliculitis among machinists.

Why continue to risk skin eruptions by using solvents to remove paint, tar, pitch, grime, etc., from the skin.

USE SCRIPT-OIL

It can eradicate them *without irritation*
Save insurance costs—Prevent lost time due to dermatoses

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You owe it to your firm to give SCRIPT-OIL a trial to see if our claims are justified.
Money back if not entirely satisfied.

SCRIPT-OIL LABORATORIES

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(For details, use Key # C-31 on card on page 75)

required to extinguish the fire had it been attacked with water alone.

Of the 300 industrial, municipal, state, county, and civilian defense fire officials who witnessed the test, many said they were convinced the results will have important implications for the fire-fighting services. Said one superintendent of fire and plant protection at a chemical plant:

Reduces Water Damage

"The demonstration of the technique was most impressive. It should be possible to put a dry chemical tank unit aboard a fire truck and go in to do a job in places where there's a water shortage. In addition to the quick extinguishments achieved, it also could mean a sharp reduction in the amount of water damage, which is an important factor in fighting fires in warehouses and similar buildings."

The extinguisher manufacturer's representative, who knocked down the fires with the dry chemical, estimated that only 110 pounds of the chemical was used out of a 350-pound capacity. He fought the fire alone, although an assistant carrying a 30-pound portable unit was present in support. He used a nozzle that was adjusted to expel the chemical in a straight, rather than a fan-shaped, stream. The water to douse the embers was sprayed on by Santa Rosa firemen through two 2 and one-half inch fog nozzles.

Pictures by courtesy of Ansul Chemical Co.

Instrument Conference

Los Angeles has been selected as the host city for the 10th Annual Conference and Exhibit of the Instrument Society of America, President William A. Wildhack announced. Dates will be September 12–16, 1955 at the Shrine Exposition Hall and Shrine Auditorium. The theme will be "Instrumentation Paces Automation." Dr. Arnold O. Beckman has been appointed general chairman of the host committee, with Fred Tabery, 3443 S. Hill Street, Los Angeles, set to serve as exhibit manager.

SAFETY ACHIEVEMENTS

THE NATIONAL Plant in Johnstown, Pennsylvania, of The National Radiator Company, has received a first place award in the 1953–54 safety contest sponsored by the Foundry Section of the National Safety Council. A similar award was won by the Johnstown Plastic Metals Plant of this manufacturer of a full line of heating equipment and industrial products.

• • •

A SAFETY RECORD, driving 550,000 miles without an accident won an inscribed trophy for George H. Robbins, salesman in the South Central district for the Miller Brewing Co., Milwaukee, Wis. Representing 22 years of safe driving, the award was presented "for his contribution to public safety."

• • •

EVERY YEAR since 1926 the "Iron Man," a bronze life-size statue of an Armco steelmaker, has been awarded to the safety group in the Armco Steel Corporation's plants which has the lowest number of lost-time accidents per million man hours worked. This year Middletown (Ohio) Works Safety Group 1, comprising the Middletown coke plant and blast furnace, the open hearth sections, electric melting, scrap preparation, and a number of service and staff sections, won the trophy with a record of 0.37 accidents per million man hours.

Since January, 1954, when the group had its only accident for the year, it has worked over 2,600,000 man hours without a major injury.

Winning second place in the 1954 Armco safety contest was the company's Zanesville, Ohio, Works, and in third place was the Hamilton, Ohio, plant. Twenty-two Armco groups competed for the award.

• • •

THE FIRST PLACE safety award in the large brewery classification of the United States Brewers Foundation's 1954 safety contest was won by the Miller Brewing Co., Milwaukee, Wis. With a record of 3.90 disabling injuries per million man hours worked, the company regained the title it had won during three of the four preceding years.

• • •

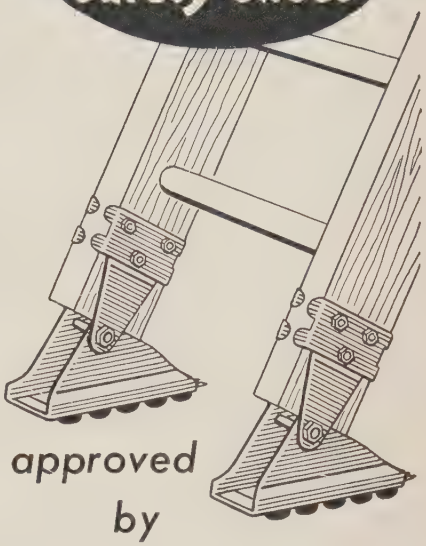
A CHARLOTTE, North Carolina professional truck driver, who has been driving commercial vehicles for more than 18 years without an accident, was presented a North Carolina "Driver of the Year" gold trophy by Governor Luther Hodges.

Elbert B. Koontz, a long-haul driver for Central Motors Lines, Inc., received the coveted annual award, after being selected by a three-man panel of judges.

• • •

AN EDUCATIONAL program, regular inspection and personal responsibility have paid off at the Ontario, California plant of Lockheed Aircraft Service, Inc., which worked 15

Dayton safety shoes



approved by UNDERWRITERS' LABORATORIES

these shoes make your ladders safer

Your straight ladders will enjoy a firmer grip on the ground or on the floor with these popular Dayton Safety Ladder Shoes. Neoprene rubber suction treads really grip slippery floors — and — a simple turn and spike steel tips dig into the ground for real security and safety. The base is 16-gauge steel. Side plates are 13-gauge steel. Lock nuts, spring washers assure precision adjustment. Treads are renewable. All zinc-plate finish.

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Dayton safety ladder co.

2339 Gilbert Ave., Cincinnati, Ohio
In Canada—SAFETY SUPPLY CO., TORONTO
(Use Key # C-32 on Inquiry Card on page 75)

months without an employee losing a day's work due to injuries incurred on the job. The safety record dates from September 1953 and is based upon nearly three million man hours worked by an average of 812 employees.

The aircraft service company's two California plants, at Ontario and Burbank, for the year 1954 reported the number of lost time injuries per million hours worked as 1.20.

• • •

As an example of what can be done, the 150 drivers of The Western Express Co. carried cargoes 1,064,752 miles in over-the-road operations, during 6⅓ weeks without an accident. Traffic officials from the Cleveland area, Pennsylvania, Massachusetts and New York congratulated the company for its pace-setting safety mark at a luncheon meeting of the firm's management and safety committee. The record was seen as a significant result of Western's unique safety program, with strict adherence to all driving rules and regulations by operators. The safety committee emphasizes driver instruction, generating and maintaining enthusiasm, judging driver performances for safety awards.

In setting the mark, Western's drivers were using heavily travelled highways, through numerous high-accident areas, from Toledo, Ohio to Boston, Mass., without mishap. Exacting schedules were maintained in all kinds of weather.

• • •

Last year marked the most successful safety record in the history of American Cyanamid Company, according to Stanley F. Spence, the firm's Director of Safety and Loss Prevention. The number of lost-time accidents per million man hours was 1.90, lowest rate ever recorded by the company and a figure considerably below the average for the chemical manufacturing industry. The company's severity rate was 0.09 in 1954 compared to 0.70 in 1953. Perfect safety records were compiled by 13 Cyanamid plants during the year.

• • •

Management of the Ansul Chemical Company of Marinette, Wis., cheerfully paid out an extra day's pay to its more than 600 employes recently, in recognition of the workers' record of no lost-time accidents during 1954. The men worked a total of 1,043,199 hours without an accident. The last lost-time accident occurred on November 24, 1953.

• • •

During a special ceremony, the Paulsboro Mfg. Co. of Fullerton, Pa., won special recognition from its compensation insurance carrier for an outstanding safety record.

The award was for accident-free operations since September 3, 1953.

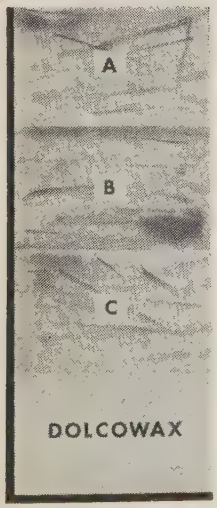
• • •

Over two million man hours without a lost time accident is the record made by B. F. Goodrich Chemical Company's Louisville installation, according to J. L. Nelson, plant manager. Since the last disabling injury on September 3, 1953, some 2,200,000 man hours have been worked without a lost time accident at the large plastic and rubber making plant of BFG Chemical.

• • •

A special award from its insurance carrier for having achieved one million man hours of operation without a lost time accident has been made to Pako Corp. of Minneapolis. In establishing the one million man hour safety record, Pako employees recorded their lowest accident frequency of all time; lowest severity rate; greatest number of man-hours without a lost time accident; and greatest number of consecutive months—16—without a lost time accident.

"TRAFFIC PANEL" TEST PROVES
DOLCOWAX
BEST FOR LONG-LASTING FLOOR BEAUTY!



THE TEST—four sections of flooring, each panel prepared with a different floor wax. All panels subjected to heavy traffic. . . .

THE RESULTS—The DOLCOWAX panel retained markedly finer lustre—its beauty actually increased with wear—and it retained scuff and scratch resistance to a greater degree.

DOLCOWAX *premium quality* floor wax is most economical in the long run. Ideal for "second coating"—the second coat integrates with the first . . . no "crawling" or "puddling" to prevent an even, uniform film.

IMPORTANT: The slip-resistance feature built into DOLCOWAX permits a soft, lovely finish with safety protection! Has Underwriters Laboratories approval, of course.

When preparing floors for waxing, use CINDET, the Dolge all-purpose cleaner, for more complete stripping of old wax film.

Write for literature; consult your DOLGE Service Man on your floor finishing problems.

FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

dependable DOLGE
WESTPORT, CONNECTICUT

(For details, use Key # C-33 on card on page 75)

Fleet Training Courses

THE SCHEDULE of motor fleet training courses at various colleges throughout the country has been announced by the Institute of Public Safety at Pennsylvania State University. Sponsored by the National Advisory Committee for Motor Fleet Supervisor Training, the courses cover various aspects of supervision, training, safety and maintenance. The subjects and schedules for the courses are:

Supervisor Courses—selection, training and supervision of drivers; award plans; driver attitude; accident reporting; public relations; management fundamentals. Designed for fleet supervisors, managers, owners, safety directors, and insurance safety engineers. March 14–18, Univ. of Oklahoma and Univ. of Washington (Seattle); March 28–1, Univ. of Maryland; April 18–22, Univ. of Florida; 25–29; Tulane Univ. and Northeastern Univ.; May 9–12, Spring Meeting A.T.A., Minneapolis; June 20–24, Univ. of Virginia and Northwestern Univ.; Aug. 8–12, Univ. of Kentucky; Sept. 12–16, Pennsylvania State Univ.; 19–23, Purdue Univ.; Oct. 17–21, National Safety Congress, Chicago; Oct. 31–Nov. 4, Univ. of Minnesota; Nov. 14–18, Univ. of Michigan.

Trainers of Commercial Drivers—A course for driver trainers, senior drivers, foremen, supervisors, etc. Topics include effective communications, teaching methods, use of tests, accident reporting, conservation of equipment and cargo, and use of emergency equipment. April 11–15, Pennsylvania State University.

Efficient Terminal Management—For terminal managers, dispatchers, warehouse foremen and those responsible for local drivers and safety. March 23–25, Rutgers Univ.; Oct. 11–13, Pennsylvania State Univ.; Dec. 7–9, Univ. of Tennessee.

Top Management Conferences—Conference at policy-making level for owners and senior executives of motor fleets. To cover: reduction of insurance, accident and operating costs; reducing labor turnover and improving morale through awards, group insurance, pensions, etc.; developing junior managers; better public and customer relations through better driving. April 21–22, Univ. of Tennessee; Sept. 30, Pennsylvania State Univ.

Supervisor's Refresher Course—Conferences on personnel selection, training and supervising techniques. March 24–25, Oregon State College (Portland); May 5–6, Pennsylvania State Univ.

Maintenance Course—For maintenance supervisors, foremen, owners, etc. Topics include vehicle selection; basic maintenance of engine, cooling system, electrical and fuel system, clutch, transmission,

(Continued on page 67)

Testing Meter Checks Wrecker Lift Safety

A new means of quickly and accurately checking the lifting capacity of wrecking trucks and the safety factor of winches and booms has been announced by W. C. Dillon & Co., Inc.

The accompanying photograph shows how the test is accomplished. A testing meter is positioned in series between a heavy semi-trailer and the wrecker, and the load is applied through a winch. An indicated poundage somewhat below that necessary to tilt the wrecker is established as the maximum safety load and is recorded on a plate on the side of the vehicle. Use of a semi-trailer is only one means of applying the test, as any anchor point will do equally well.

A variation of this test will also serve as a means of inexpensively checking trailer and truck weights at points where no platform scales are available. All that is needed is a tripod, a hoist and the meter. Each end is weighed separately, and the two readings combined to give the total. By so doing, many thousands of dollars of highway overload penalties can be avoided, as well as expensive breakdowns due to such overloading.

The meters are available in 13 capacities, from 0–500 lbs., to 0–100,000 lbs., and are virtually unaffected by any type of weather. Because of extreme compactness, they present no storage problem, and are readily transportable if occasion demands.

For details, use Key # TS-12 on Inquiry Card on page 75.

ROAD PAINTS TAKE A NEW

When automobiles in production-line quantities pour through city streets built to horse-and-buggy dimensions, a modern phenomenon unaffectionately known as the traffic jam often results. A traffic jam can happen occasionally (and does) in any town. But in Baltimore, narrow streets and swelling car population have combined to put the squeeze on local drivers.

A couple of years ago, a group of responsible citizens in that lively port city paused to survey their traffic situation. They didn't have to look very far to see that conditions were discouragingly bad. Motoring, especially on week-day mornings and evenings, had become a mechanized nightmare of hectic gear-shifting and countless delays. Repeated snarls tied up intersections for hours, backing up for miles in a hopeless tangle of cars and trucks. Baltimore, the citizenry diagnosed, was stricken with hardening of the traffic arteries. And it was high time to do something about it.

The first pressing need was for an expert, a specialist who could put Baltimore's antiquated system of traffic control on scientific ground. Advisers pointed to Denver, where a fellow named Henry Barnes had been making news in traffic engineering. Baltimore hired Barnes away from Denver just as he was putting the finishing touches on a unique master control system for traffic lights. When he switched cities, Barnes brought along his pet antidotes for congestion—carefully timed traffic signals, judicial employment of one-way streets, and plenty of yellow and white paints.

Paint Advocate

Forceful, affable Henry Barnes has, in his 18-month reign over Baltimore roads, alternately provoked, bewildered, and amused the city with his drastic solutions to motoring gripes. It's too early to summarize his accomplishments, but this much can be said: midway in the Barnes upheaval, traffic seems to be moving faster. Few Baltimore citizens will deny that the new traffic director has already improved the driver's lot.

Although super-expressways and skyscraper parking facilities may be the ultimate answer to traffic growing pains, Barnes believes in making the most of the old-fashioned city layout in the meantime. His method is to pervade the maze of city streets with carefully marked routes designed to get motorists to their destinations in a hurry.

Chief tool for marking streets clearly and effectively is traffic paint. "There's more traffic control in a can of paint," says Barnes, "than anything else you can name. Paint will stop cars, slow them down, keep them in line and out of trouble."

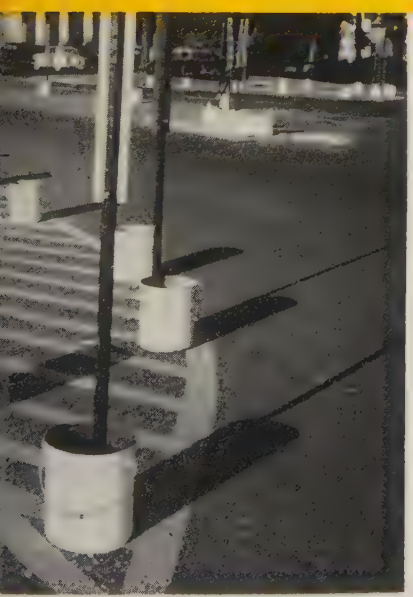
Color Recognition

Baltimore's traffic director feels that drivers can be trained to react to other traffic symbols. For example, he uses yellow paint only where a barrier is intended. "That yellow

Parking regulation has become a major application of traffic paint since the advent of the parking meter. As important as markings showing where to park are no-parking warnings such as the yellow curb and the lined area of street shown in the picture at left, above. White paint is used for such things as crosswalks. In double or treble normal width it is a particularly striking attention-getter. Just as yellow becomes identified in the drivers' and pedestrians' minds with "danger," white becomes identified with "caution."

Cars on the 4-lane boulevard below are channeled into one lane by double-yellow line. Cars coming in opposite direction use 3 lanes, one for left turns, 2 for through traffic. Printed directions right on the pavement are read by all drivers; cut down on jams due to cars in wrong lanes. Clear paint markings get left turners into proper lane half a mile before they reach an intersection (below).

TURN!



Channelizing traffic, usually done with permanent concrete islands, can be done with paint and sand-filled, old paint buckets, as shown above.

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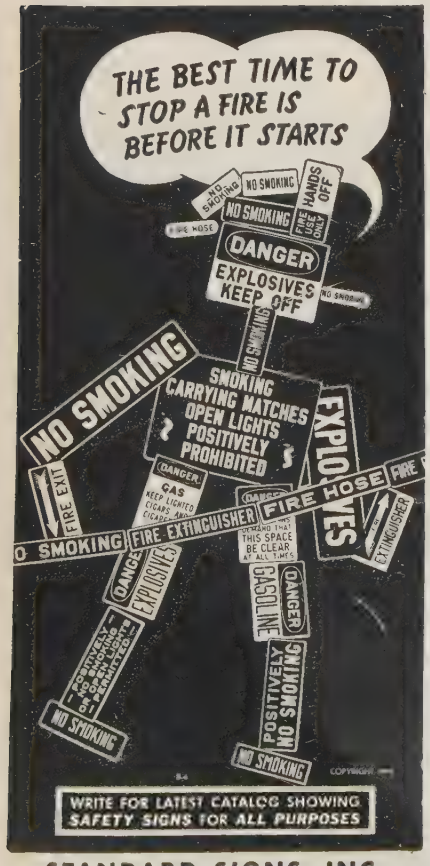
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(Use Key # C-35 on Inquiry Card on page 75)

line," he claims, "soon becomes identified with 'danger'—just as the octagonal sign has become synonymous with 'stop'."

Barnes thinks highway departments that shun yellow paint are missing a good bet. On concrete roadways, yellow contrasts with the surface better than white. It's quite effective on asphalt, too.

Under the Baltimore marking system, all four-lane roads are divided by double yellow lines. Where passing is permitted, a single yellow line bisects the street. (Barnes notes that absence of a yellow line helps identify one-way streets; residents are less likely to stumble into them driving the wrong way.) For all other markings—lane dividers, crosswalks, printed directions, etc.—white paint is standard. Paint is a valuable and economical marker, currently going into Baltimore streets to the tune of 11 thousand gallons each year.

Designed for Hustle

Baltimore drivers are getting used to traffic innovations, which have sprouted regularly since Barnes took over. Some streets that were once one-way north are now one-way south—and vice versa. An important 4-lane boulevard has been split unevenly with 3 lanes going east, only 1 west. Certain traffic signals include a special all-red period for pedestrian crossings (dubbed "The Barnes Dance" by a Denver newspaper). Contrary to the grumbling of critics, these variations are not adopted just to plague down-trodden drivers. Each move is dictated by a considered plan cautiously mapped by Barnes and his staff of specialists.

When the wizards of the Department of Traffic Engineering get in a huddle over a problem, the terminology is apt to get as involved as a treatise on organic chemistry. Nomenclature like "synchrolizer" and "detector pressure pad" is bandied about familiarly. These terms refer to some of the electronic paraphernalia used widely to count cars and interpret traffic data.

The information gathered by such devices coupled with first-hand observation and analysis determines what routing plan the department adopts. The routing plan, in turn, prescribes the signs, signals, and paint markings that will be required. Then the Planning Engineer draws up a detailed street map to indicate the nature and location of each traffic control device.

Upkeep Soaring

When the marking plan is definitely set by the experts, Baltimore's 25 man paint crew takes over. This same crew used to put down 4 or 5 miles of single line in a day. Now they can cover 15 or more miles, painting 4 lines simultaneously (double-yellow center line and 2 white skip lines). Barnes-promoted mechanization has sparked the increase. Equipment includes a truck-mounted machine and four hand machines for defining cross walks, stop lines, parking slots, etc.

Every new line painted creates that much more maintenance work. For lines must be renewed 2 or 3 times a year on busy streets, once in lightly traveled suburbs. As additional painting schemes are ordered, the maintenance job pyramids. The city will probably use 20 thousand gallons of traffic paint in 1955. That's a striking contrast to the 25 hundred-gallon rate a couple of years back.

The old paint shop, just adequate for the slow operations of former years, became cramped as activity and inventory snowballed. "For awhile," Barnes recalls, "we were storing paint in the police station, the fire house, and any other cubbyhole we could find." That situation was recently remedied when painters moved into new facilities with ample space for stock storage.

First Grade Only

Barnes is a stickler for keeping paint lines bright. With labor costs high, he's a quality-conscious paint buyer. One of his first actions in Baltimore was to ask for samples of traffic paint from a dozen different manufacturers. He established test lanes, watched the paints for a year, then asked for bids. "The surprising thing to us," he muses, "was that

the lowest bid offered was the best paint by our tests."

Before Barnes, Baltimore had been supplied with paint made by inmates of state penitentiaries. State officials looked askance when he broke precedent and went shopping for paint. Barnes won the argument by showing that state-made paint didn't measure up to his standards. Since the paint bill is only a small part of the cost of traffic paint application, quality comes first with Barnes and other modern traffic experts.

The dark streets of Baltimore (11 thousand gas lights still flicker) call for paint markers that have plenty of reflection at night. "Reflectorizing" with tiny glass beads steps up the dazzle of white and yellow paint spectacularly. In one year, Baltimore's paint force sprinkled over 44 tons of the beads onto lines throughout the city.

What types of traffic paint do they use in Baltimore? Barnes isn't interested in formulations; he tests and buys by brand. Avoiding specifications, he encourages friendly competition among paint manufacturers vying for Baltimore contracts.

Master Plan

The traffic complexion of Baltimore streets is by no means fully established. For example, one priority project—complete coordination of traffic lights—is still in the offing. Blueprints are drawn for a cycle-selector master that will cue signals at 350 intersections. This stop-and-go brain (representing an 800 thousand dollar investment) will bring Barnes just one step nearer his goal: maximum traffic through city streets in minimum time.

"When we get present traffic peaks rolling on downtown streets," says Barnes, "we'll be ready to cope with new problems that the planned expressway will create."

Some signs indicate that Barnes is steadily gaining ground in his dedicated tussle with Baltimore's traffic jumble. Accident fatalities, for one thing, have been running behind year-ago deaths. Test runs show that it's easier to get across town in the rush hour than it used to be. Non-local traffic on principal U. S. routes now moves through the city more rapidly.

Success has brought the bother of notoriety to the traffic director's office. As the focus of constant attention and frequent demands—from civic organizations, political officials, reporters, and the Police Department—Henry Barnes remains remarkably non-plused. Sometimes he jokes about the strain of his job.

"This office used to be a psychiatric ward," he chuckles, "and I don't think it's changed much since."

But Barnes has the important comfort of knowing that the people are rooting for him. Local citizens have really become traffic-minded; that's part of the Barnes program. Around the nation, as well, everyone concerned with the national problem of too many cars is watching Baltimore.

Asked if his methods would work in other big cities with acute traffic congestion, Henry Barnes maintains, "It's all a matter of education."

Pictures and text by courtesy of *Paint Progress*.

Fleet Training Courses

(Continued from page 63)

axle, and brakes; use of instrumentation; planned system of maintenance; selection, training and supervision of personnel. March 2–4, Univ. of California (Los Angeles); 9–11, Univ. of California (Berkeley); 21–25, Univ. of Toronto; 21–23, Univ. of Washington; 28–1, Pennsylvania State Univ.; April 11–15, Univ. of Denver; 18–22, New York Univ.; Oct. 10–14, Rutgers Univ.; 24–28, Hawaii Employers Council; Nov. 1–3, Oregon State College; 7–9, Montana Motor Transport Assoc. (Billings).

Effective Fleet Operation—Off-campus courses, on an afternoon or evening basis, for smaller fleets or small units of larger fleets. March 7, Pittsburgh, Pa.; March 8, Sharon, Pa.; March 9, Rochester, N. Y.; 10, New Brunswick, N. J.; 22, Evanston, Ill.

Complete details concerning any of the courses can be obtained by

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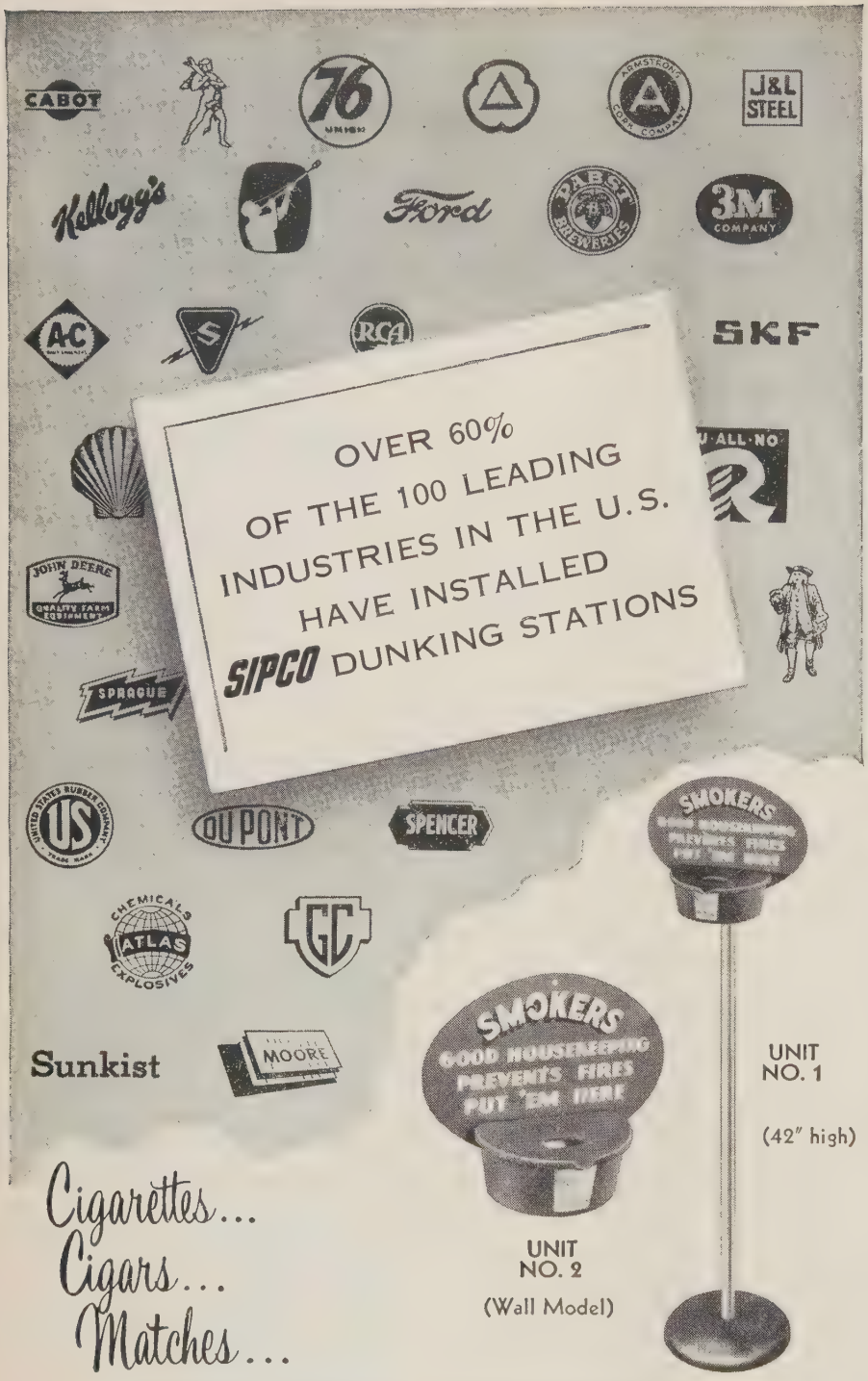

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(For details, use Key # C-41 on card on page 75)

contacting: Amos E. Neyhart, Secretary, National Committee for Motor Fleet Supervisor Training, Institute for Public Safcty, Pennsylvania State University, State College, Pa.

Traffic Seminars

THREE SEMINARS in traffic engineering will be offered in Evanston, Ill., by the Midwest Section of the Institute of Traffic Engineers and the Traffic Institute of Northwestern University. The seminars, lasting one week each, are designed for practicing highway and traffic engineers, with specialists in the field acting as instructors.

The first seminar, "Field Study and Survey Methods," March 7–11, is open to qualified engineers.

Following this will be unit two, "Regulation and Control Devices," March 14–18. It is open to men who have completed the first seminar or who have the necessary background in traffic engineering problems.

Subjects of this seminar will be: new developments and trends in traffic engineering, traffic signs and markings, traffic signal equipment (fixed-time and actuated), techniques of traffic signal installation and maintenance, public speaking, application of traffic signals, transit operations, control of pedestrians and turning movements, one-way streets, regulation of truck operations in a central district, curb parking regulations, and unbalanced lane methods.

The third unit is "Traffic and Transportation Planning," March 21–25. It is open to men who have completed the first two seminars or who have the necessary background in traffic engineering problems.

Subjects will include: cost of congestion and accidents, elements of city planning, elements of rural and urban highway planning and design, vehicle performance characteristics as applied to traffic design, highway capacity manual, design of parking facilities (garages and lots), street lighting, geometrics of intersections at grade, and public transit planning. More information is available from the Traffic Institute, 1704 Judson Ave., Evanston, Ill.

What's New . . .

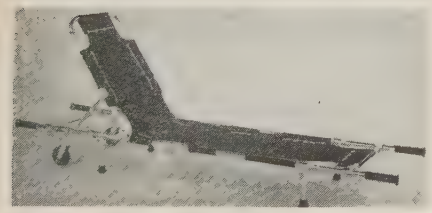
For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE & PRODUCTION

PHENOLIC HAT

(Use Key # 821 on Inquiry Card on page 75)

MANUFACTURED FROM 24 die-cut pattern pieces, the C-80 hard hat, made by Paramount Plastics Co., is said to withstand 80 foot pound drop-ball tests repeatedly without fracturing or breaking. The hat is designed to permit ample room between the head and the outer shell, especially at the back of the head. The suspensions cradle is laced in and is adjustable to various head sizes. In addition to impact hazards, the phenolic hat offers protection against rain, sun and flash flames. Cap brim models available as well as full brim. Accessory equipment includes chin straps, lamp brackets, winter linings and extra leather suspensions.

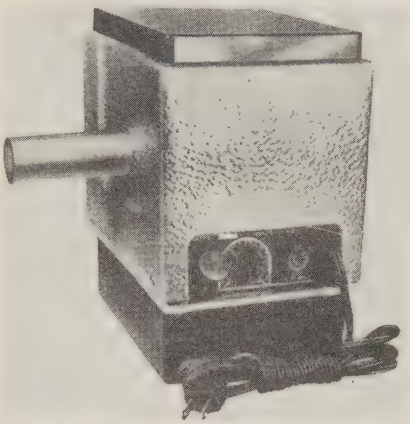


FOLD-AWAY STRETCHER

(Use Key # 822 on Inquiry Card on page 75)

AN UNUSUALLY versatile stretcher combines the features of litter cots with a design that permits folding to a small, compact unit for storing. It is the new model 18 "Fold-A-Way" Stretcher made by Washington Products Co. The handle grips, the straight legs and the wheeled legs all can be folded in, and the whole unit is hinged at the center so that little storage space is required. All these fold-away features permit picking up patients from ground level or with legs extended, adjustment of the patient in lying or sitting positions, carrying by two handlers, or wheeling by one person.

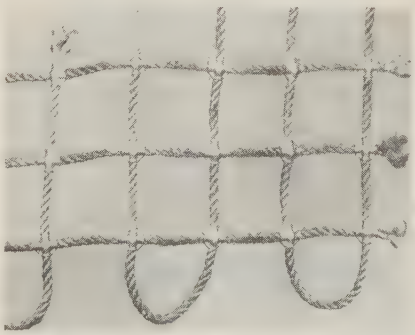
It is constructed of heavy wall aluminum with a strong rubber fabric that resists soil. The extension handles have rubber hand grips for safety. The back rest is adjustable from flat to four positions. Weighing only 23 lbs., the unit is recommended for industrial first aid rooms; hospitals; civil defense teams; fire, police and rescue squads; etc.



AIR SYSTEM SANITIZER

(Use Key # 823 on Inquiry Card on page 75)

A UNIT that is designed for installation in air conditioning and heating systems to sanitize the air by reducing air-borne bacteria and viruses is being marketed by the Iron City Chemical Co. Called the Monarch Glycolator, it has been approved by the Florida Hotel and Restaurant Commission as an agent for air sanitation. Florida is the first state that has enacted legislation that requires air sanitation along with air conditioning in public places where re-circulated air is used.



REINFORCED LIFE NETS

(Use Key # 824 on Inquiry Card on page 75)

NEWLY DESIGNED life nets with safety L & S section clamps are now manufactured by E. D. Bullard Company. Nets are constructed of ⅜-inch diameter extra superior, pure manila rope, with a breaking strength of 1,350 pounds. The rope is chemically treated to make it water-repellent and mildew-proof. Border lines on all sides are ¾-inch manila rope. Nets are available with 4, 6, 8 or 12-inch squares, and are made to individual specifications for each job.

The patented L & S intersectional metal clamp strengthens the net and makes every junction fireproof and waterproof, keeps the net from curling and knotting, and prevents the rope from wearing.

Life Nets are essential for the safety of workers on bridges, derricks, dams, buildings and similar types of construction. In addition to saving lives and catching falling equipment, they offer an important psychological benefit. Men knowing that a Safety Life Net is under them are able to do their job with more confidence and greater efficiency. Samples of the net sections are available.

EXPLOSION-PROOF FOOTSWITCH

(Use Key # 825 on Inquiry Card on page 75)

FOR USE IN those areas where industrial and scientific processes involve the presence of explosive fumes, the new Levinthal Model 3 Footswitch offers a construction comprising in its entirety Underwriters' Laboratory-approved components for Class I, Group C & D; and Class II, Group E, F, & G hazards.

Electrical ratings of the unit for alternating current include uses up to 15 amperes at 125, 250, or 460 volts. Direct-current ratings are ½ ampere at 25 volts, ¼ ampere at 250 volts. Contacts can be connected for either normally-open or normally-closed operation.

The new footswitch, made by Levinthal Electronic Products, Inc., is of grounded construction, and is supplied in standard form with a 15-foot Type S cord and a 3-prong male plug.

LOW TEMPERATURE EXTINGUISHER

(Use Key # 826 on Inquiry Card on page 75)

A FIRE EXTINGUISHER that functions effectively at temperatures of 65 degrees below zero Fahrenheit, has been developed by Ansul Chemical Co. Originally designed to meet U. S. Air Force specifications for the Arctic and other cold weather areas, the extinguishers have a special rubber hose to withstand the extreme cold without stiffening or cracking. Also, nitrogen, rather than carbon dioxide, is used to expel the extinguishing agent, which is a dry chemical.

The new units are available in 4-pound and 20-pound capacity hand portable units and 150-pound and 350-pound wheeled units. In addition to the rubber hose, they are equipped with special nozzle and puncture pin seals for proper operation in extreme cold. For temperatures below minus 40 degrees Fahrenheit, the wheeled units may be ordered with special low temperature rubber hose. All the low temperature extinguishers are painted blue to distinguish them from the regular red extinguishers used in temperate and tropical climates.

TILT SEAT STOOL

(Use Key # 827 on Inquiry Card on page 75)

TO GIVE long needed relief for "stand-up" jobs, the Ajusto Equipment Co. has designed an adjustable "Tilt Seat" stool for inspectors, polishers, pressmen, bank tellers and jobs requiring standing for long periods of time. No tools are required to make any of the adjustments and the seat can be used in a horizontal instead of tilted position for bench work. The height of the stool can be adjusted to personal requirements, and the unit has two kinds of foot rests: one mounted on the central column, primarily for a change of leg position in ordinary sitting; and the other in the form of a foot plate for use when the seat is in the tilt position. Both foot rests can be adjusted as required. The versatile stool should help reduce foot and leg ailments as well as general fatigue.

MECHANICAL RAM HAMMER

(Use Key # 828 on Inquiry Card on page 75)

A SELF-CONTAINED, completely portable hammer, operating on the ram principle, has been introduced by E. V. Nielsen, Inc. Called the Ram-Ex, this hammer requires no air lines or electrical connections. It is completely operated by hand, but the maker claims it is faster and provides more impact than conventional tools of the same weight.

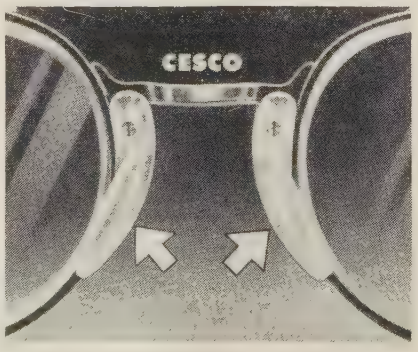
The chuck has a quick change action for using over 40 tools for chipping, gouging, drilling, rivet busting, cutting, sealing, scaling, caulking, roughing, and other operations normally performed by pneumatic or electric hammers.

Any of three size weights may be mounted on the guide rod at the rear of the chuck holder. The guided blow, plus bosses around the ends of the weights and the chuck holder, make it almost impossible for an operator to injure his hands. An adjustable, sliding collet on the guide rod, as well as interchange of different size weights, are used to control the impact of the stroke from a light tap to a smashing blow.

FLEXIBLE SPECTACLE-PADS

(Use Key # 829 on Inquiry Card on page 75)

A NEW BRIDGE-PAD for its line of CESCO Comfort-Bridge Spectacle-Type Goggles has been announced by the Chicago Eye Shield Co. Made of polyethylene, in right and left, these moulded pads are said to be flexible enough to adapt themselves to the contour of the individual wearer's nose structure for perfect, full-contact fit. They spread the weight evenly and lightly. Known as part No. F9P, they are available on new Comfort-Bridge Spectacle-Type Goggles or separately as replacements for non-flexible plastic pads furnished originally.

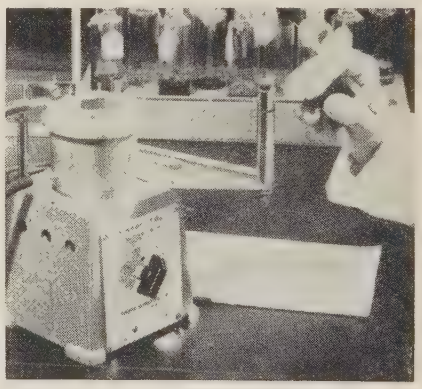


FUNCTIONALLY DESIGNED FIRST AID UNITS

(Use Key # 830 on Inquiry Card on page 75)

THE DAVIS Emergency Equipment Co. Inc. have redesigned their first aid D-Cartons to provide for a more convenient inventory system as well as greater sanitary protection for the contents of the cartons. The new sanitary wrap is sealed with an easy-to-open red tab. When the cartons are placed in their case, a continuous red line shows that none has been opened. But a break in the red line indicates that a box has been broken and that it should be checked for replacement before the contents are exhausted.

The color of the Davis D-Cartons has been changed to the same shade of gray as their cases and the lettering made more legible for quicker identification.



NEW FLASH-POINT TESTER

(Use Key # 831 on Inquiry Card on page 75)

THE TAG Open-Cup Flash-Point Tester, meant originally for petroleum chemists, has since been adopted as standard in the testing labs of the railroad, trucking, paint, solvent, varnish, and vegetable-oil industries for open-cup flash-point determinations of mobile volatile liquids flammable below 175°F. The Fisher Scientific Co. has now brought out a new model with built-in, easy-to-control electrical heating.

A solidly-mounted 150-watt unit in the base gives evenly distributed heat, unaffected by drafts, with a heating rate that conforms to the 2°F-per-minute specified by the American Society for Testing Materials. The new "percent-wattage" method of indicating the power input is especially utilitarian since temperature increase in the sample varies almost linearly with percent wattage.

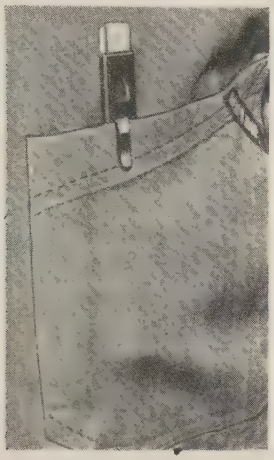
The new Tester is also available with gas and with alcohol-lamp heaters. Each of the models has a water bath to hold the sample cup, a support for bath and ther-

mometer, and a permanently-mounted, flame-tipped wand with which to ignite the vapors from the sample.

The water bath has been redesigned with both outlet and inlet so that water can be circulated between determinations to cool the sample cup and increase the speed of sampling. To keep the test flame the specified size, a bead of exactly the right diameter is mounted on the edge of the bath for easy comparison.

A self-positioning support swivels the thermometer out of the way while samples are changed and returns it to the required position for the new sample.

The new Tester meets the specifications of Committee D-1 for ASTM Tentative Designation D-1310 and satisfies all of the requirements of the Bureau of Explosives.



WELDER'S SOAPSTONE HOLDER

(Use Key # 832 on Inquiry Card on page 75)

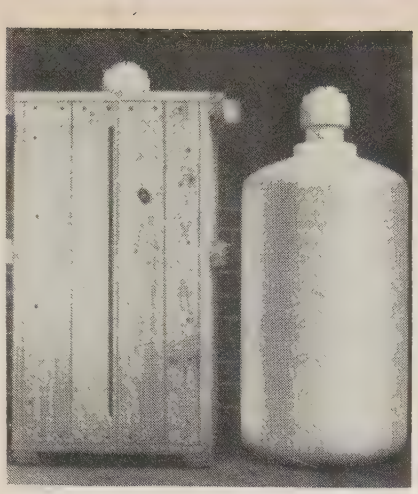
A SOAPSTONE holder that protects the marking material from breaking and from becoming mislaid is available from Atlas Welding Accessories Co. This holder is rigid metal and has a spring clip for carrying it in the pocket where it is always handy. It has a button slide in the back so the soapstone can be readily expelled as it wears down, permitting the welder to use short ends.

COLD IMMERSION CLEANER

(Use Key # 833 on Inquiry Card on page 75)

ACCORDING TO The Curran Corp., a new development in Self-Emulsifying Diphase Solvents for decarbonizing and paint stripping promises tangible and substantial labor saving in engine repair and overhaul. Formulated for diesel as well as aero internal-combustion engine use, the new solvent is of the cold immersion type. Its self-scouring action cleans carbonaceous tars, coke and carbon varnish, strips paint and primers.

Properly supervised, a service life of three years is estimated as no loss occurs except through dragout. Replenishment automatically restores tank level and top performance. Evaporation is controlled by a floating glycerine-like "Hydro-Seal" to which distilled water may be added up to 50% volume in a deep tank, thus allowing agitation or recirculation of the solvent beneath the Hydro-Seal which remains undisturbed.



STACKABLE CARBOY

(Use Key # 834 on Inquiry Card on page 75)

INCREASED SAFETY and ease of handling are major features of a new stackable carboy produced by the Industrial Safety Supply Co., Inc. The light-weight solid wood jacket and polyethylene bottle have been approved by the ICC.

The "Poly-Box Carboy," designed to fit ordinary acid-handling equipment, is available with Plaxpak carboy bottles of 6½ and 13 gallon capacities. Produced for maximum safety, the carboy jacket features a safety filling liquid level slot. Triangular corner posts guard against damage from rugged use. The rectangular jacket has an opening in its base for easy and safe stacking. A skidded bottom allows handling by lift trucks. Special woods and metal fasteners are available.

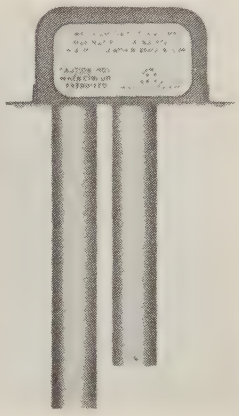
STORED PRESSURE EXTINGUISHER

(Use Key # 835 on Inquiry Card on page 75)

NO INVERTING or bumping is necessary for operation of the "Redi-Jet," a new type 2½ gal. water or anti-freeze fire extinguisher made by Stop-Fire, Inc. It is a one-hand operated stored pressure unit (not cartridge-operated): all the action is at the top. It is pressurized with air or nitrogen to 100 psi. Discharge is accomplished with a one-hand squeeze-grip operating lever which also serves as a carrying handle at the top of the extinguisher. The powerful stream carries 35 ft. or more. With anti-freeze solution, the "Redi-Jet" is effective from —40 F to plus 120 F.

The unit has been fully approved by Underwriters' Laboratories, Inc., for use against wood, paper, rubbish, and all other Class A fires. Additional features include: controlled flow with spring loaded valve; no need for annual recharge, gauge provides a constant visual check; simple, inexpensive servicing with a standard air compressor at any garage; convenient installation on standard bracket.

The "Redi-Jet" is built to withstand corrosive elements and rough usage. It features a one-piece seamless drawn 85–15 brass shell with corrosion-proofed interior, and solid brass fittings. The shell is leakproof: 450 psi hydrostatic test.



AIR-FLOW AND LIQUID-LEVEL DETECTOR

(Use Key # 836 on Inquiry Card on page 75)

A NEW PRECISION flow-detecting instrument, called the "Detect-A-Flo," designed to sense and respond to changes or stoppages in the flow of air has been developed by Fenwal Inc. It can be used as a warning device in air-cooled equipment, a ventilation control, and for similar applications where a particular flow rate must be maintained. It may also be used as a liquid-level detector or controller in storage and supply tanks, responding to a change of less than 0.1 inch in liquid level. Viscous fluids have little or no effect on its operation.

The instrument can be set to respond to any mass rate of flow of air in the approximate range of 1000 to 50,000 lb. per hr. sq. ft. It is easy to install directly in the duct line or tank being monitored, thus eliminating lead lines, auxiliary fittings, and related condensate or clogging problems. The unit has no moving parts, preserves the smooth flow of the monitored stream, is unaffected by vibration, is repeatable, and is hermetically sealed.

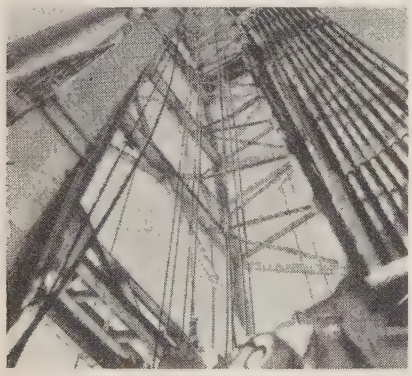
One leg of the unit is heated by a small internal heater. As the flow rate drops, the heated leg expands because less heat is conducted away, and this expansion is transmitted through lever action to a strut-and-electrical-contact assembly in the other leg. This motion causes the contacts to move apart, thus breaking the circuit. The instrument retains its accuracy in either a constant or changing ambient temperature.

STABILIZED SAFETY SOLVENT

(Use Key # 837 on Inquiry Card on page 75)

A NEW, highly stabilized "Vythene" Safety Solvent has been announced by Tect, Inc. It is non-flammable, fast evaporating and suitable for a great variety of industrial and household purposes. It may be used for such diverse operations as the cleaning of electric motors and electrical equipment, plant maintenance, wax dispersion or removal, cleaning of machinery, typewriters, metals, motion picture film, and grease spot removal on garments.

It is a stabilized 1, 1, 1-Trichloroethane for which there is a U. S. patent pending. It can be refluxed indefinitely in the presence of such reactive metals as aluminum, brass and copper without chemical breakdown. It is non-corrosive to all metals and practically inert to ordinary electrical insulating varnishes and materials. 1, 1, 1-Trichloroethane was rated in 1953 by the American Conference of Governmental Industrial Hygienists as 1/20th as toxic as carbon tetrachloride.



IMPROVED WIRE ROPE

(Use Key # 838 on Inquiry Card on page 75)

A NEW HIGH strength wire rope, claimed by the manufacturer to be at least 15 percent stronger than the best grade rope now made, has been announced by the wire rope divisions of American Chain & Cable Company. Initial production will go to the construction, petroleum, mining, and logging fields. An average tensile strength of 300,000 psi has been achieved by the use of special precise analysis high carbon steel wire and improved processing.

The preformed rope, to be known as VHS—designating very high strength—will be marketed by both the Hazard Wire Rope and American Cable Divisions. It is already being used by the Navy for steam jet catapult launching assemblies, and for arresting gears and barriers. It has been widely tested in heavy-duty construction, mining, petroleum (pictured here) and logging installations where its service life more than doubled that of existing cables. Present diameters of the new product range from ½ inch to 2 inches.

In addition to 15 percent greater tensile strength than improved plow steel, VHS cable is more wear-resistant, keeps its shape under pressure, resists fatigue, is tougher, and resists plastic deformation or the tendency to become "hide bound." A special new lubricant is used which is designed to last for the life of the rope.

PLASTIC HEADSHIELDS

(Use Key # 839 on Inquiry Card on page 75)

TWO NEW molded fiber-glass plastic headshields for the head protection of welding operators are announced by Hobart Brothers Co. The manufacturer claims that this construction offers the strongest protective material per ounce of weight, and that the shields provide the user lighter weight comfort with complete head protection from the welding arc and spatter. Fiber-glass reinforced plastic is durable, heat and moisture resistant, and its smooth, attractive surface is easy to clean.

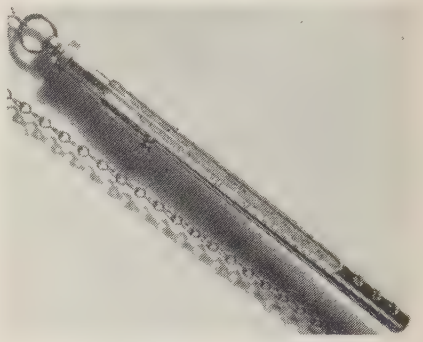
Type 971 has the lens holder molded right into the shield to eliminate light leaks and to further reduce the weight. Type 973 has a lift front lens holder to permit the operator to view, chip and clean the weld without raising the hood. Both shields are equipped with Federal Specification lens.

MAGNETIC FLOOR SWEEPER

(Use Key # 840 on Inquiry Card on page 75)

HOMER Magnetic Floor Sweepers remove nails, wire and other magnetic material from roads, streets, airports, construction jobs, machine shop and factory aisles, loading areas, etc. Made by the Homer Mfg. Co., Inc., the sweepers save tires, tire repairs, down-time and promote personnel safety, and recovery of valuable scrap material.

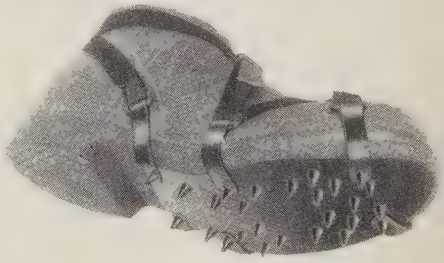
They consist of a permanently energized Alnico V magnet assembly, mounted on semi-pneumatic tires, with ball bearing wheels. Handles, of tubular steel with plastic handle grips, are adjustable to two positions: for manual use, or for towing with truck or other vehicle. They roll freely and are easily maneuvered in any plant or factory location. Handle and wheels are quickly removed and the magnetic assembly can be used for suspended sweeping with fork or industrial lift truck. They can be used in wet or dry locations. An automatic stripping device makes it easy to unload recovered tramp iron from the sweeper. Three models are available for light, heavy, extra heavy duty. Several width sizes for each model.



DEGREASER CLEANOUT INDICATOR

(Use Key # 841 on Inquiry Card on page 75)

A BOON to users of vapor degreasers is the new "Cleanout Indicator" made by Ramco Equipment Co. Developed to save cleanout costs, this specially designed instrument tells the exact condition of the solvent in the degreaser. It eliminates guesswork and makes it easy to keep an accurate check at all times. Calibrated for both trichlorethylene and perchlorethylene solvents, the indicator is easy to read, and may be carried in the breast pocket. It comes complete with a performance and control chart and instructions.



CALKED STEEL SOLE

(Use Key # 842 on Inquiry Card on page 75)

A FLEXIBLE steel strap-on sole, made by O. A. Norlund Co., Inc., provides sure footing on wood, stone or ice. There are 26 case-hardened steel calks riveted to the steel sole, which bends easily with the natural flexing of the foot. The sole can be worn on either boots or shoes and is held in place by web straps. Metal strips at the edge of the shoe protect the webs from abrasion and can be bent with pliers to conform to the shape of the shoe and prevent the sole from sliding beneath the shoe. The calked soles are being used by ice house workers, lumbermen and other outdoor workers.

SCAFFOLD SAFETY HOOK

(Use Key # 843 on Inquiry Card on page 75)

PAINTERS, maintenance departments, contractors, builders and other users of hanging scaffolds should be interested in a new cleat-hook to replace clumsy, unsafe knots for rope scaffolds and bos'n chairs. Originally developed for the marine field, the "Safeway Sailor's Hook" is being marketed by Stuart D. Brown.

Made of aluminum alloy, the hook is said to have a tested safety capacity of 2,000 lbs. In addition to its safety features, the device eliminates the need for fastening and unfastening knots each time the position of the scaffold or chair is changed. The knot on the hook is made once for the duration of the job. The unit is available alone or with a complete bos'n chair with brackets for a safety belt.

BOX CAR DOOR OPENER

(Use Key # 844 on Inquiry Card on page 75)

THE LUG-ALL Company has introduced its newest tool, the Lug-All Car Door Puller, Model HDR-27. It weighs only 12½ pounds, and has a reach of 27 feet and a total pulling capacity of 3,000 lbs. It will open box car doors easily—single doors, double doors, even doors on 50 ft. box cars. It eliminates use of heavy tools and crow bars, and opens box car doors safely, quickly and economically.

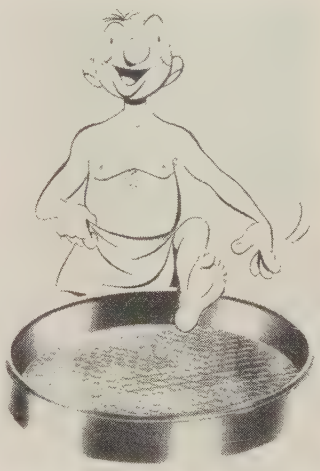
The device can be rigged by single cable for extra long reach or double cable to provide extra power on really "tough" box car doors. An eye bolt and clevis hook combination at the end of the frame permits right angle anchorage on projecting parts of the box car. A safety feature is that the handle will bend before the Car Door Puller can be dangerously overloaded, thus preventing possible injury to employees.

LPG POWERED TRUCKS

(Use Key # 845 on Inquiry Card on page 75)

UNDERWRITERS' Laboratories approval on Yale LP Gas or propane powered industrial lift trucks from 3,000 to 10,000 pound capacity has been announced by The Yale & Towne Mfg. Co. Covered in the approval is the installation of either A.S.M.E. or I.C.C. containers. Fuel for truck operation is provided in one of two ways: a bottle arrangement which makes possible quick and easy refueling by substituting another bottle; a tank which is a permanent part of the truck and is refilled from a storage source.

For trucks to use LP-Gas or Propane, it is necessary to convert the gasoline engine to this fuel by the substitution of accessory equipment along with an externally mounted bottle or tank. LP-Gas or Propane is suitable for industrial truck operation under the following conditions: 1. A cycle of operation which includes many idling and slow speed periods. (Propane does not have as great a tendency to form carbon deposits and sludge under these conditions.) 2. Faster cold weather starting followed by a smooth running engine. (Propane is fed to the carburetor as a gas and no vaporization is necessary.)



FOOT BATH TRAY

(Use Key # 846 on Inquiry Card on page 75)

THIS FOOT bath tray offers several safety and maintenance features in its use to prevent athlete's foot. It has a non-skid waffle tread to prevent slipping. Its round shape keeps dirt and sediment from lodging in corners, making it easier to clean.

This modern foot bath is molded of tough, long-life rubber that is not affected by antiseptic solutions. It measures 19 inches in diameter by 3½ inches high, a convenient size for shower rooms of any size in plants, factories, schools, institutions, swimming pools, homes, etc. Available from General Scientific Equipment Co.

DEVICE ATTACHES WELDING HELMET TO HARD CAP

(Use Key # 847 on Inquiry Card on page 75)

A SIMPLE method for economically attaching a welding helmet to a safety cap is embodied in the "Two clips and Neoprene strap" device designed and manufactured by The Fibre-Metal Products Co. The resultant combination provides the double protection of the usual welding helmet plus head protection for situations where there is a chance of falling or flying objects that might cause head injuries.

Quick installation of the "Speedy Attachment" to helmets in the field can be made with a screwdriver or a coin. The welder then can attach or detach the safety cap which is "clipped" into the helmet under the tension of the Neoprene strap. No basic alteration of either the helmet or safety cap is necessary. It fits all popular peak-type safety caps for complete head protection.

PORTABLE AIR COMPRESSORS FOR BREATHING EQUIPMENT

(Use Key # 848 on Inquiry Card on page 75)

FOR OWNERS OF demand-type breathing apparatus, there are new, lightweight, portable high pressure air compressors introduced by The Cornelius Co. There are four models to supply pure, clean air to users of Scott Air-Pak and MSA Respiratory Equipment. The new units are available with electric motor or gasoline engine power source. They are said to be the first truly portable high pressure compressors for civilian and commercial use. Miniature in size, their portability and ruggedness provide the versatility necessary for "on-the-spot" charging of portable cylinders as well as air storage tanks.

The 32 series includes 2 models which provide 0.6 cfm of free air and have a rated discharge pressure of 2500 PSI. Each assembly weighs less than 50 pounds complete with power source. The 130 series also includes 2 models which will deliver 2cfm of free air and discharge pressures of 3000 PSI. The 130 series is recommended for users of larger air volumes or where it is necessary to maintain pressure in a cascade storage system.

MOTORIZED WHEELBARROW

(Use Key # 849 on Inquiry Card on page 75)

A MOTORIZED wheelbarrow, the "Workhorse," is equipped with two-drive wheels in front and a guiding caster-wheel in the rear, over which is mounted a 4-cycle, 2½ hp., gasoline motor. The new unit, made by Worthington Mower Co., can handle full 400-lb. loads. Throttle and clutch controls are on the handles, for easy starting and speed control. Speed can be maintained at an easy walking pace. Thick tractor treads on the drive wheels enable the wheelbarrow to be used over rough, irregular ground.

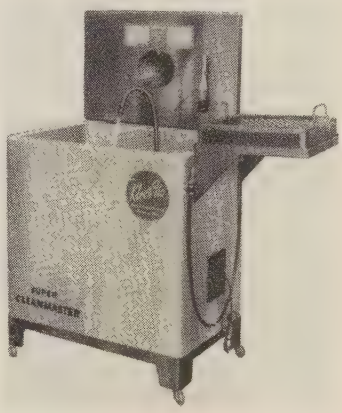
The rear caster wheel permits the unit to be steered easily and spotted in position accurately. The tray is so balanced that dumping is a simple, rather than a backbreaking job. By pulling a catch and lifting lightly on a handle at the rear of the tray, the load is dumped without effort.

AUTOMATIC DEGREASER

(Use Key # 850 on Inquiry Card on page 75)

A NEW, automatic cold-washing degreaser, designated as the "Super Cleanmaster" Model 50, is announced by the Kleer-Flo Co. The machine employs a powerful turbulent action created by compressed air which combines with the penetrating chemical properties of the cleaning compound, enabling it to remove heavy deposits of oil, dirt, grease and chips from all types of metal parts.

A patented electric pump prolongs the life of the cleaning compound by continuously filtering out dirt, chips, and abrasives. The machine is equipped with a full length air-agitated soaking tank, hinged work shelves, parts basket, drying shelf, and a compressed air gun for faster parts drying. Mounted on casters, the unit can be easily moved to any part of the shop for "on the spot" production or maintenance cleaning operations.



HEAT HOOD

(Use Key # 851 on Inquiry Card on page 75)

PERSONNEL OF Safety First Supply Co. have developed a new mask (SF524AT) for second helpers and similar workers subjected to heat, spark and flame hazards. The mask, which has undergone severe on-the-job testing, incorporates many advanced features that increase safety and comfort for the wearer. It is made of tropic weight asbestos cloth, aluminized for greater heat deflection. The plastic vision area has been made oversize for greater visibility, and the ventilating screen in the rear, also oversize, is made of stainless steel wire, which prolongs its life because of its resistance to corrosion. The mounting is a sturdy fiber frame with adjustable headgear.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the opposite page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti Fogging Equipment
104	Sweatbands
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
111	Safety Toe Shoes
112	Safety Boots
113	Wooden Sole Shoes
114	Anti-Slip Soles
115	Oil-Proof Soles
116	Welding Helmets
117	Welding Curtains
118	Protective Skin Creams
119	Skin Cleansers & Soaps
121	Sanitary Drinking Cups
122	Athlete's Foot Control
123	Salt Tablets
124	Noise Control
125	Antiseptic Medication
126	Burn Medication
127	First Aid Kits & Supplies
128	Stretchers & Litters
129	Resuscitators
130	Portable Ventilators
131	Dust & Fume Collectors
132	Carbon Monoxide Control
133	Fire Extinguishers
134	Safety Cans
134A	Extinguishing Ash Trays
136	Alarms & Warning Lights
137	Safer Solvents
138	Flammable Liquid Pumps
139	Explosion-Proof Lights
140	Electrical Insulation Testers
141	Anti-Slip Flooring & Steps
142	Anti-Slip Waxes & Finishes
143	Floor Cleaning Products
144	Floor Machine Equipment
145	Oil & Grease Absorbents
146	Paints
147	Ladders & Safety Devices
148	Scaffolds
149	Work Platforms
150	Fluorescent Lamp Guards
151	Machine Guards
152	Power Press Feeders
153	Safety Signs
154	Aisle Marking Equipment
155	Safety Awards & Emblems
156	Employee Safety Guide
157	Hand Tools

AUTO SAFETY BELT

(Use Key # 852 on Inquiry Card on page 75)

AN AUTOMOBILE seat belt, made in accordance with the specifications of the Cornell Aeronautical Laboratory after their research into vehicle crashes and testing of belt designs, is being marketed by the Hickok Mfg. Co. The Cornell tests indicated that car occupants, restrained by suitable seat belts, would be safeguarded from severely damaging impacts such as striking the head against the windshield.

The seat belt kit includes a specially fabricated lap-strap belt with a safety buckle similar to that used in airplanes. The belt, along with the seat, is held in place by a supporting bar anchored through the floor to the frame by steel cables. The belts are available in a range of colors.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

PERSONAL PROTECTION

Safety Spectacles 222
U. S. Safety Service Co. Well-illustrated 4-page folder on modernly styled safety spectacles incorporating a new safety lens material. The full-color bulletin illustrates the attractively colored spectacles in styles suitable for both men and women, with corrective and protective lenses.

Self-Contained Breathing Equipment 223
Scott Aviation Corp. A large, well-illustrated folder gives detailed information on the self-contained Air-Pak for fire fighting and industrial respiratory safety. Featured is a large detail drawing of the equipment with data on the various parts.

Aluminized Clothing 224
Far-Ex Corp. Catalog contains detailed descriptions and technical data on several types of Fyre-Armor garments for employees subjected to high heat radiation and for industrial and municipal fire departments and rescue squads.

Decontamination Suits 225
Mine Safety Appliances Co. A two-page bulletin describes and illustrates a chemical type decontamination suit for protection against extreme chemical toxicity hazards such as nitrobenzene, nitrotoluene and aniline. The suit is a complete unit from neck to toes and includes a special air-supplied hood. Also shown is an acid suit suitable for light concentrations.

Electrical Workers' Gloves 226
Wicx-Merit Glove Co. Several types of cover gloves for linemen and electrical workers are shown in a 1-page bulletin. These are leather gloves and the bulletin indicates the types of electrical or utility construction jobs for which the various styles are suitable.

Eye Protective Equipment 227
Watchemoket Optical Co. Many new developments are included in the newly revised 12-page catalog of plastic eye-protective products. Featured are new types of ventilated goggles, visored goggles and other models developed previously.

FIRE PROTECTION

Oil and Gasoline Containers 228
Eagle Mfg. Co. This catalog, fully illustrated, offers the company's complete line of oilers and oil and gasoline containers. Many of the safety cans are UL and FM approved. The catalog is notable for the wide variety of cans and oilers shown.

Fire Resistant Walls 229
Vermiculite Institute. This folder contains several informative data sheets on Vermiculite concrete panel or spandrel walls which combine a high degree of fire resistance with light weight. Included are reports on the design of cast-in-place walls, and three reports on fire tests, including one by UL.

MAIL POSTAGE PAID CARD FOR MORE DATA

Fire Detector Unit 230
The FireStat Co. This bulletin gives basic data on an automatic fire detector unit which can be used with an alarm system to provide automatic warning of fire. It can be used in factories, garages, schools, hotels, homes etc.

LIGHTING EQUIPMENT

Emergency and Inspection Lights . 231
Stewart R. Browne Mfg. Co., Inc., An unusually valuable 42-page catalog of somewhat specialized lighting equipment that is widely needed to prevent accidents. The lights, many UL approved, are explosion proof or vapor proof or have special safety features. Included are flashlights, extension lights, both general and special inspection lamps, floor and flood lights, grounding clamps, flashers, etc.

Vapor Tight Lights 232
Day-Ray Products Inc. Vapor and moisture tight inspection lights that utilize a fluorescent lamp are described in this two-page bulletin. Full specifications are given and suggested uses for maintenance work in automotive, chemical, paint and other industries are indicated. Servicing instructions are also included.

FLOOR MAINTENANCE

Eliminating Slippery Floors 233
Walter G. Legge Co. Inc. An entertaining but informative 16-page booklet, "Mr. Higby & The Gremlin," gives the inside story on floor accidents, and shows how to improve floor safety while eliminating wasteful maintenance practices.

Oil Absorbing Compound 234
The Flor-Dry Co. Appropriately titled "A Carpet of Safety," this small folder outlines how this UL-approved oil and grease absorbent prevents accidents, fires and simplifies maintenance. It also lists typical industries where the absorbent is particularly useful.

Safety Gratings 235
Bustin Firm-Grip Grating Corp. A new 12-page illustrated catalog shows this company's many types of grating, platforms, ramps, ladders, flooring, catwalks, dockboards, etc., and also truck safety equipment such as grille guards, gates, brackets, and safety steps.

Steel Grid Flooring 236
Irving Subway Grating Co. Inc. A small folder gives concise information on heavy duty industrial floors that utilize a steel grid whose open spaces are filled with concrete, asphalt, etc., or can be installed on top of existing floors. The folder outlines uses for the grating and its long-wearing features.

BUILDING MAINTENANCE

Locker Room Design 237
The Moore Co. This design file outlines standards to be maintained in toilet, shower

(Continued on next page)

SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE.

READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

ADVERTISED PRODUCTS: Just insert the key number shown under each advertisement in the boxes below.

NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item.

FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

March, 1955

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Name _____ Title _____

Company Name _____

Street Address _____

City _____ Zone _____ State _____

Free Bulletins (Cont'd)

and locker rooms for maximum sanitation and efficiency. One section gives complete details for laying out locker rooms with lockerbaskets that can be raised to the ceiling.

Industrial Vacuum Equipment ... 238
The Spencer Turbine Co. An unusually well illustrated 12-page bulletin containing complete description of stationary and portable vacuum equipment. Featured is a table for estimating the horsepower required for any specific job, an outline of the latest method of refuse handling, and the application of vacuum to machine design.

Plastic Windows 239
Alsynite Co. of America. An illustrated bulletin describes shatterproof window panes made of lightly colored, flat fiber-glass. The bulletin outlines the material's ease of installation, light diffusion and shatter resistance, and suggests suitable locations for using the various colors.

Electric Panelboards 240
General Electric Co. Complete specifications and selection data on electrical distribution panelboards suitable for the control and protection of branch circuits, and as feeders to lighting panelboards, motors, and miscellaneous power loads are given in this illustrated 4-page bulletin. Units are for 250-volt AC or 125–250-volt DC service.

Piping Vibration Eliminators 241
American Brass Co. Vibration eliminators that are designed for air conditioning or refrigeration units or any general piping or tubing where vibration is encountered are described in a 4-page bulletin which includes construction details and size specifications. The equipment absorbs vibration, deadens noise, and reduces maintenance.

Coolant Filtration System 242
Industrial Filtration Co. This 4-page bulletin describes the installation of a central coolant filtration system. It outlines the maintenance and hygienic advantages as well as production efficiencies and economies.

MISCELLANEOUS

Safety Awards 243
Williams Jewelry & Mfg. Co. The new catalog of "Industrial Emblems & Awards" illustrates and describes an extensive line of plaques, trophies, badges, emblems, and a wide variety of award-gift items.

Safety Signs 244
A. C. Davenport Son Inc. This convenient 2-page bulletin lists standard wordings for several types of enamel-painted metal signs. Types of headings include: Danger, Caution, Safety First, Notice, Directional, Traffic and also special worded.

Hose Check List 245
Thermoid Co. Maintenance engineers and other users of industrial rubber hose will find this check list of use in obtaining longer hose life. It is printed on stiff cardboard for wall mounting and lists 11 important points and shows four common abuses.

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BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 6634, SEC. 34.9 P. L. & R., NEW YORK, N. Y.

"SAFETY MAINTENANCE & PRODUCTION"
ALFRED M. BEST COMPANY, INC.
75 FULTON STREET
NEW YORK 38, N. Y.

vice Dept.

READERS FREE INQUIRY CARD
for further data
on
ADVERTISED PRODUCTS,
NEW PRODUCTS,
FREE BULLETINS & CATALOGS

Stonehouse SIGNS

FOR INDUSTRIAL ACCIDENT PREVENTION

WHEN workers go through the gate, they should find safe working conditions inside. They should feel secure against possible accidents.

"Safe—they come to work: Safe—they go back home" is a fine goal for any Industrial plant.

STONEHOUSE SIGNS

Train your workers in safe practices. Tell them; warn them of hazards and how to guard against them on the job. Do it effectively, economically—with Stonehouse Accident Prevention signs.

Our complete Catalog—64 pages, in full color—is yours, free on request.

Stonehouse SIGNS, inc. MANUFACTURERS • Stonehouse Bldg., 9th at Larimer
Denver 4, Colorado

"Signs Since 1863"

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For details, use Key # C-39 on card on page 75)

Thantis® LOZENGES

first aid for throat irritations

SORE THROATS due to coughs and colds, if neglected, may result in lost man hours of work.

THANTIS® Lozenges contain no antibiotic; they produce no unpleasant by-reactions in the mouth.

THANTIS Lozenges relieve pain promptly—reduce infection—act prophylactically.

Twenty-three years' extensive clinical and lay use has proved the safety and effectiveness of this popular product.

® Reg. U. S. Pat. Off.

Mercurochrome®

First aid for wounds . . .

Neglect may cause infection which can be prevented by prompt use of 'Mercurochrome.'®

No antiseptic has been proved to be more effective than 'Mercurochrome' for topical application.

HYNSON, WESTCOTT & DUNNING, INC., BALTIMORE 1, MARYLAND

(For details, use Key # C-40 on card on page 75)

KANSAS CITY, MO.
PUBLIC LIBRARY
APR 13 1955

Safety Maintenance and Production

EST. 1901 AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SIXTY CENTS APRIL, 1955

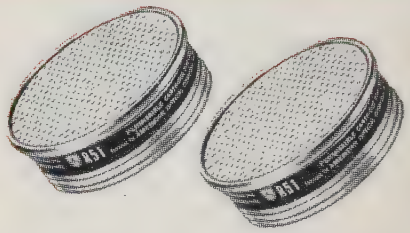
Respiratory Protection

Be Wise—Economize—Standardize—Simplify Stock Problems —with the AO† R5000 Respirator*

Here's *complete* respiratory protection in one "package"! If you have several respiratory hazards to control, the AO R5000 will save you inventory problems and money. This ingenious twin cartridge respirator converts to many types of protection quickly merely by interchanging the filters and cartridges. Ask your nearest AO Safety Products Representative.

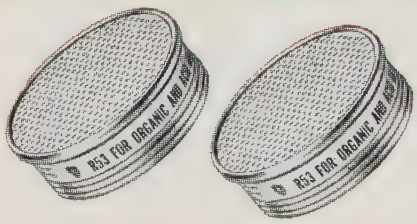
R50 — For combination of all dusts, not significantly more toxic than lead. B.M.2156

R50A — used with R50, converts to a dust and mist respirator. Protects against all dusts not significantly more toxic than lead, pneumoconiosis-producing mists, chromic acid mists. B.M. 2156 includes B.M.2156A

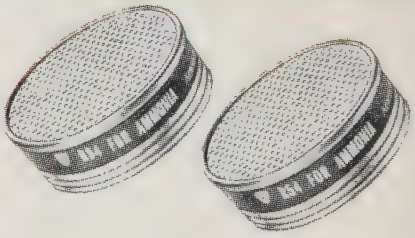


R51 — For light organic vapors and gases of paint spraying, degreasing, dry cleaning. B.M.2304

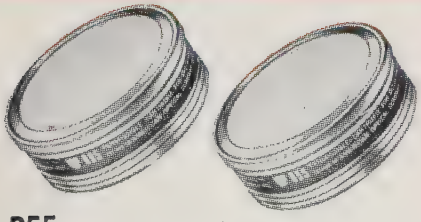
R52 — For acid gases, and mists of plating operations, pickling tanks, etc.



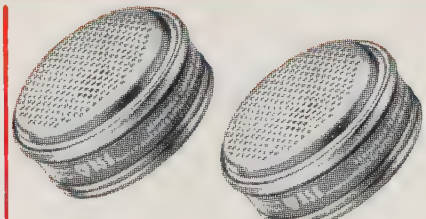
R53 — For combined acid and organic gases like carbon tetrachloride and acetic acid.



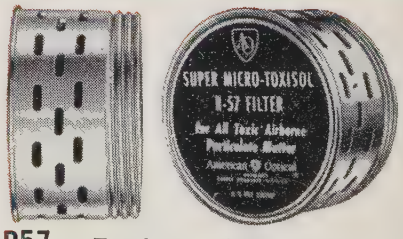
R54 — For protection against low or nuisance concentrations of ammonia.



R55 — For those who are exposed to both organic vapors and all dusts not significantly more toxic than lead. B.M.2305



R56 — For fumes produced in welding, burning, smelting and refining. B.M.2163



R57 — For dusts, mists, fumes, significantly *more* toxic than lead including radioactive particulate matter.

*One Face Piece Takes 9 Filters and Cartridges

American Optical
SAFETY PRODUCTS DIVISION

†T.M. Reg. by American Optical Company

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For details, use Key # D-1 on card on page 85)

Determining "Speech Interference Level" Type 1551-A Sound-Level Meter ($360) at left, and Type 1550-A Octave-Band Noise Analyzer ($535) at right.

Noise!

First Measurement — then Control

Analysis of the frequency distribution of noise energy is needed for the satisfactory solution of a noise problem.

Preliminary investigation with G-R's Sound-Level Meter or Sound-Survey Meter is recommended to give an idea of the magnitude of the problem. But to get a good measure of the seriousness of the noise — with regard to hearing damage or difficulty in hearing verbal instructions — noise dissection into its separate frequency elements is necessary.

Such analysis is most readily accomplished with the G-R Octave-Band Noise Analyzer operating from the Type 1551-A Sound-Level Meter. The noise energy in each of eight frequency bands (one octave apart — from 20 to 10,000 cps) is accurately measured with this equipment. Measurements are rapid, merely the sum of the attenuator and panel meter indications.

Information in this form is most helpful in "silencing" the noise-contributing elements. The data can also be used to calculate speech interference level, a figure which gives a measure of the difficulty in hearing an average speaker in the presence of the noise. This is an accepted method of rating office and factory noise; the procedure can be used to describe quantitatively the noisiness of any surrounding.

The means of determining speech interference level, and many other techniques of sound measurement are described in detail in the G-R HANDBOOK OF NOISE MEASUREMENT by Dr. L. L. Beranek, Associate Professor at MIT, and Dr. A. P. G. Peterson, General Radio Company. This publication of over one-hundred pages is a comprehensive treatment of the subject of noise and its measurement. It describes in simple and direct language standard measuring equipment and interpretation of results. It makes recommendations as to the most fruitful approach in minimizing detrimental sounds. This up-to-date HANDBOOK is available from G-R at $1.00 to cover printing, mailing and handling costs only. In the interests of avoiding unnecessary clerical expense, please enclose check or dollar bill with your order.

GENERAL RADIO Company

275 Massachusetts Avenue, Cambridge 39, Massachusetts, U.S.A.

90 West Street NEW YORK 6
8055 13th St., Silver Spring, Md. WASHINGTON, D.C.
920 S. Michigan Avenue CHICAGO 5
1000 N. Seward Street LOS ANGELES 38

GR

1915-1955
40 Years of Pioneering
in Electronics

(For details, use Key # D-2 on card on page 85)

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TORIT

UNITIZED

DUST CONTROL

eliminates dust at its source!

TORIT UNITIZED

DUST CONTROL means each machine has its own custom-tailored dust collector designed to work specifically for *that* machine. There is no guess work, or average suction. Furthermore, dust control is provided only when that machine is running . . . there is no waste of power such as you have with centralized control when only a few machines are operating. This means better dust control at lesser operating cost and less initial installation cost. Get the facts now on how Torit will work better to . . .

"CLEAR THE AIR".

See our catalog in Sweet's Machine Tool File, or write:

TORIT

MANUFACTURING CO.

304 WALNUT STREET

ST. PAUL 2, MINNESOTA

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(April 12–15, Hotel Statler, New York City)

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USSSCO's new *all Plastic* SAF-I-SPEC

2 sizes
Large or Small
for men and women

new styling assures wearer acceptance

new design Acetate frames provide greater strength

new light-weight for comfort
(new SAF-I-SPECS weigh less than one ounce)

new colors in charcoal and burgundy

This new light-weight safety spectacle features ophthalmic type temples and strong, rugged brow-bar — with nickel steel hinges for greater strength and longer life. Velvet-soft nose piece. Lens locks in place securely — easily removable without tools. Meets Federal specifications for optical qualities and impact resistance.

A fully experienced USSSCO service engineer is available to assist you in your safety program.

Contact your nearest USSSCO Sales Office listed in the classified section of your telephone directory or write direct to USSSCO General Offices, Kansas City, Missouri.

Working for You to Make Safety Work

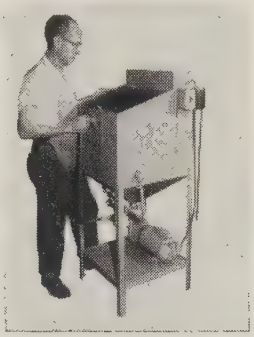
UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MISSOURI

BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
IN CANADA: PARMELEE, LTD., TORONTO & MONTREAL

(For details, use Key # D-14 on card on page 85)

FINE ORGANICS' 'SAFE-TEE' SOLVENT F.O. 128 GOES TO WORK FOR INDUSTRY

Actual photographs of machines designed and built by **MARTIN AIRCRAFT, Baltimore, Md.** for cleaning and degreasing large and small parts with F.O. 128



FINE ORGANICS is proud of the part it plays in helping THE MARTIN CO. perform an effective cleaning operation on both large and small parts. Many leading organizations are finding F.O. 128 not only a reliable cleaner but a decided factor in the elimination of personnel health hazards and wasted man hours.

PLANT MAINTENANCE SUPERVISORS

appreciate the versatility of this fast, non-corrosive cleaning solvent. Ideal for heavy work, yet will not damage delicate machined surfaces or attack insulation. It is used effectively for cleaning and degreasing ELECTRIC MOTORS, POWER GENERATORS, CONDENSORS, STARTERS, PRODUCTION EQUIPMENT, and all areas in the plant where greasy, oily dirt has to be removed.

SAFETY ENGINEERS

find the high flash point makes the use of this solvent desirable wherever fire hazards prevail.

INDUSTRIAL HYGIENISTS

recommend replacing Carbon Tetrachloride with F.O. 128. Low toxicity aids in avoiding harmful effects on personnel.

Write Dept. 'B' for information on our other Safe-Tee Solvents and the name of your nearest F.O. representative.

Ask for our Technical Bulletin "How To Clean Electric Motors."

FINE ORGANICS, Inc.
211 East 19th St. · New York 3, N.Y.

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Super Safety Cleaner

MULTI-CLEAN *Method*

with **ACTIVATED HCP**

What is HCP? HCP is the new activated chemical additive in Super Safety Cleaner that generates *higher cleaning power*. Developed by Multi-Clean chemists for fast, safe cleaning of all types of floors, the HCP additive powerizes the cocoanut oil action instantly—freeing dirt and holding it in suspension. Dirt floats away with wet pickup vacuum cleaner, floor squeegee or mop.

HCP helps free dirt and grime from floors almost instantly.

HCP helps hold dirt and grime in liquid suspension for easy removal.

HCP is completely safe for all types of floors.

CLEANS ALL FLOORS *FAST!* SAFELY!

Super Safety Cleaner, with HCP added, gets rid of floor dirt *fast*. But not at the risk of floor damage. **Super Safety Cleaner is *safe*.** Field tests have proved it is harmless to asphalt tile, rubber tile, linoleum, terrazzo, concrete, wood, magnesite and all other types of floors. **Super Safety Cleaner is *economical*.** Because of its high concentration, it goes more than twice as far as ordinary cleaners. Just 1½ ounces added to a gallon of water, even hard or cold water, will do almost all cleaning jobs *fast*. For fast removal of heavier wax build-ups, 8 ounces of Cleaner per gallon of water is recommended.

We Guarantee that Super Safety Cleaner, with HCP added, has been formulated from the finest ingredients under strict quality control, and when used according to directions *must* give satisfactory results.

Super Safety Cleaner with HCP is also available with germicide antiseptic added which eliminates odors and kills harmful bacteria or fungus organisms.

FREE TEST

See for yourself how Super Safety Cleaner with HCP will clean your floors. If you wish, a Multi-Clean distributor will be happy to make the test for you.

Send coupon for your free test. Send it Now! . . . no obligation.

MAIL THIS COUPON TODAY!

MULTI-CLEAN PRODUCTS, INC.
2277 Ford Parkway, Dept. SMP-45, St. Paul 1, Minnesota.

Gentlemen: Sure, I'd like a free test for my floors and more information on Super Safety Cleaner with HCP. I understand this puts me under no obligation.

*Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

(For details, use Key # D-6 on card on page 85)

COVER GOGGLES
FOR COMPLETE PROTECTION

WATCHEMOKET eye SAVERS

SOFT VINYL FRAME
For Safe, Comfortable, Form-fit

Model 440 SV—clear frame **460 SV**—green frame

Heavy Impact Goggles with replaceable, optically perfect, methacrylate lenses.
Clear Lens (C) .125" thick
Green Lens: Light (G2) Medium (G3) .080" thick

Model 441 SV—clear frame **461 SV**—green frame

Average Impact Goggles with replaceable, optically perfect, acetate lenses.
Clear Lens (AC) .060" thick
Green Lens (AG) 0.50" thick

Models 490 or 491 — opaque black frames
Furnished with Stac-Vent only
Methacrylate Lenses: same as 440
Acetate Lenses: same as 441

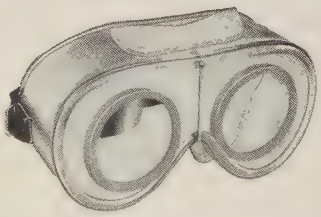
STAC-VENT (SV) . . . a new principle in goggle ventilation, proven to provide clearer fog-free vision, more comfort and greater safety. Other types of ventilation available: Regular Ventilation (RV), Screen Ventilation (CV), or No Ventilation (NV).

Safe, Shatterproof Lens Easily Replaced. Eye Savers lenses will not shatter or splinter with impact . . . will not pit. Lenses are easily replaced by removing the "lock bar" that positively locks the lens in the frame. No special tools needed. Lenses are interchangeable in all Soft Vinyl Frames.

Fits Over Any Prescription Frame — Extra wide 6" lens in the large vinyl frame provides ample space for metal or horn rimmed glasses. Frame forms a bumper that prevents the lens surface from touching when goggle is laid flat on a table or bench.

Safer, More Comfortable to Wear — Eye Savers, so Vinyl frames form-fit any shape face comfortably. Flanged nos bridge fills the gaps around the nose to assure greater prote tion. Adjustable, elastic headband holds goggles in positio

OTHER SOFT VINYL GOGGLES



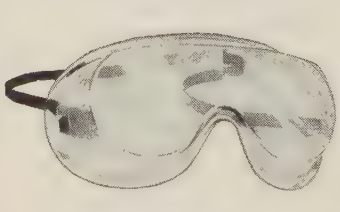
WELDING GOGGLE Model 492

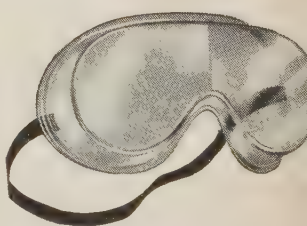
Large opaque black vinyl frame form-fits the face. Stac-Vent provides light-tight ventilation. Removable lens holder holds replaceable standard 50 mm round, Federal Specifications, welding filters—shades 3, 4, 5, or 6 available. Glass filters protected inside and outside by acetate cover lenses.

COVER GOGGLE Model 442 SV

Same frame as Model 440 with interchangeable lens holder holding standard 50 mm round safety glass lenses. Provides maximum protection where there is extreme abrasion. Glass lenses easily replaced in lens holder. Cover lenses can be provided to protect glass lenses from pitting.

ONE PIECE ACETATE GOGGLES





CHEEPEE Model 99

Low cost one-piece acetate goggle . . . close fitting, lightweight and comfortable. A special forming process never effects the lens surface . . . provides optically perfect, full, all around vision . . . no distortion of image. Adjustable, elastic headband provided. Available in clear and medium green.

D-LUX Model 100

One piece, acetate goggle f over most prescription glass Formed optically perfect w full all around vision . . . distortion of image. Adju able, elastic headband provid Exceeds federal specificatic for resistance to breakage a for optical qualities. Availa in clear and medium green.

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Featherlight" TUC-AWAY

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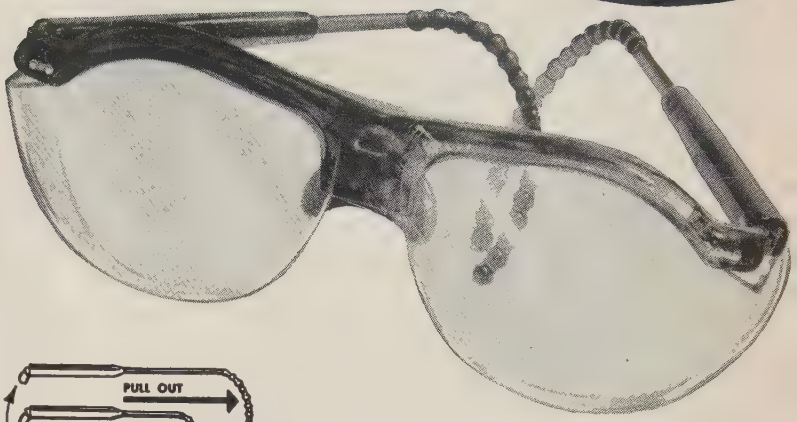
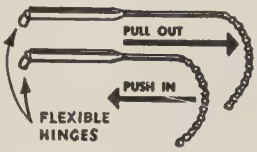
odel 415 — plastic retrax temples (illustrated)
odel 412 — metal retrax temples
odel 410 — plastic club temples



Shatterproof Methacrylate Lenses

Replaceable — Interchangeable — Eye Savers "Tuc-Away" lenses are plano, optically perfect, .080" thick for safe, impact protection; will not shatter or pit. They provide full, clear vision with side shield protection or cup type side and bottom protection. Available in ar, green and gold shades.

onomical . . . initial cost is low, maintenance is eliminated, lacement lens cost is low. It pays to have 90% protection 0% of the time instead of 100% protection only 50% the time.

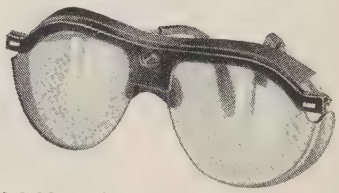


Adjustable Retrax Temples — Plastic or metal Retrax Temples telescope in and out to provide proper head fit. Universal Nose Bridge assures comfort and eliminates need for extra stock sizes. One size fits all.

SPECIFY LENS BY CODE NUMBER				
Type Lens	*Clear*	*Light Green*	*Med. Green*	*Gold*
Regular Side Shield	CSS	G2SS	G3SS	YSS
Full 1" Side Shield	CSSF	G2SSF	G3SSF	YSSF
Semi-Cup Shield	CSC	G2SC	G3SC	YSC
Full-Cup Shield	CFC	G2FC	G3FC	YFC

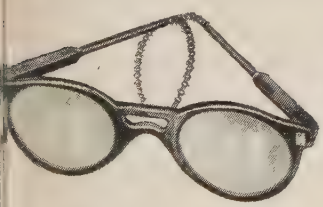
VISOR-TUC

The Visor-Tuc with over eyes "VISOR" provides almost 100% protection with comfort. Visor fits snugly against the forehead. All lenses are interchangeable in Tuc-Away.



Model 425—plastic retrax temples
Model 422—metal retrax temples (illustrated)
Model 420—plastic club temples

PLIT-JOINT



FRAME ONLY Model 80

rnished for prescription use th standard 47 mm P-3 shape nses. Lenses not furnished.

FRAME WITH PLANO Model 80 MS

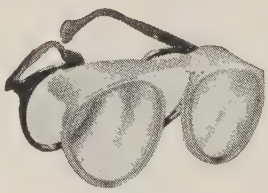
fety spectacles with optically rfect, curved, methacrylate nses, .080" thick, clear (MSC), ht green (MSG2), medium een (MSG3).

SIDE SHIELDS

SNAP-ON SHIELDS Model 115

Extra side protection with prescription safety spectacles can be obtained by snapping on these deep cup acetate side shields. Will fit on all sizes of safety frames. Available in clear (AC) or medium green (AG). These eye shields are easy to attach and remove, thanks to nickel silver clip-holders which hold them in place.

CLIP-ONS



TUC-OVER
MODEL 175 Medium
MODEL 176 Large

Featherlight Tuc-Overs are all plastic with integral visor protection. Replaceable, optically perfect lenses are shatterproof, curved methacrylate .080" thick, available in clear (C) light green (G-2) and medium green (G-3). Frames are available in a choice of translucent white or green in medium or large.

EYE SHIELDS

METHASPEC Model 55

Low cost Methaspec Eye Shields are the ideal visitors' protection. The lens and visor are molded in one piece, formed of guaranteed optically perfect .080" thick methacrylate in clear (C) with black painted visor, light green (G-2) and medium green (G-3). Retrax temples and lens angle device permit easy adjustment to fit comfortably.

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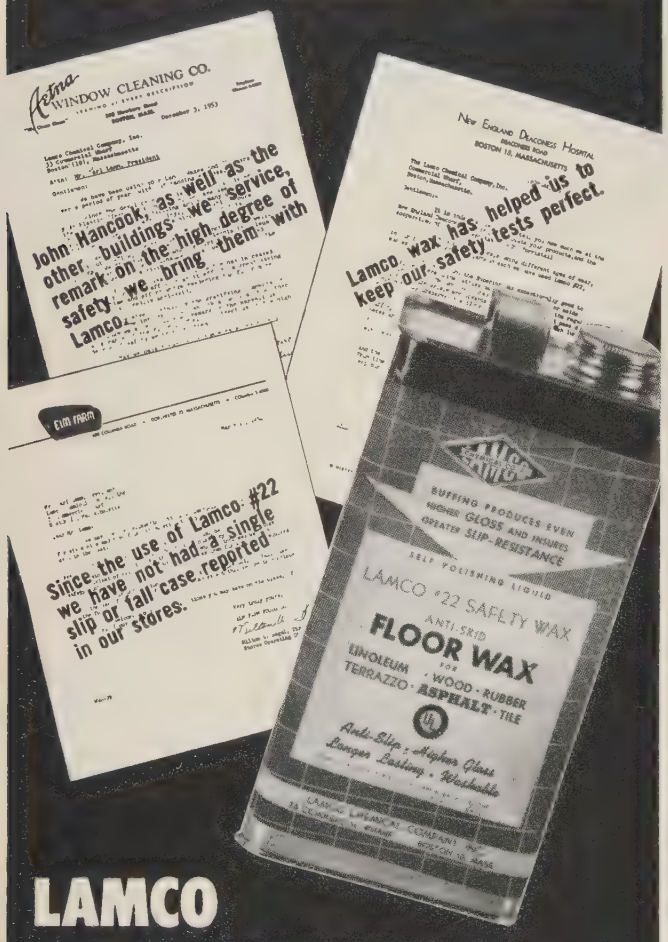
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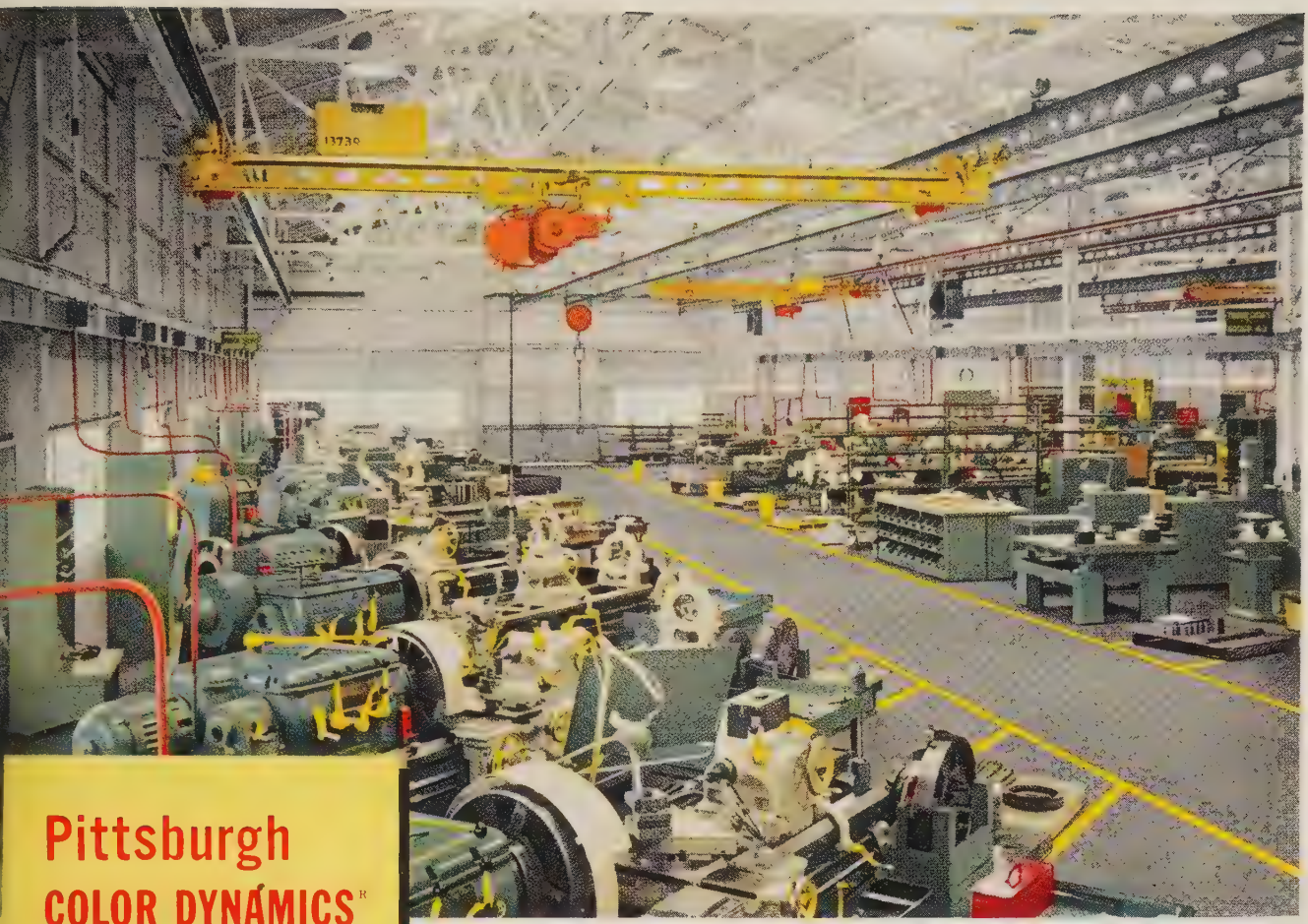

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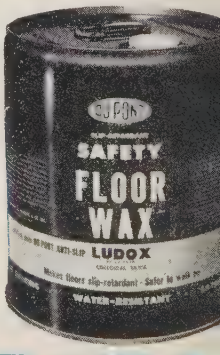

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SAFETY MAINTENANCE & PRODUCTION

FORMERLY "SAFETY ENGINEERING"
EST. 1901

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25th ANNUAL

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It's Safe to Say

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★ BLACK-OUT! . . .

ANY review of accidents and their tragic results must include consideration of those who, by reason of age or some hidden physical condition, find themselves with slowed-down reflexes. The man who says at 50 that he is "the same as I was at 30" is fooling no one but himself. The succeeding years bring about an even greater and often more rapid change.

A case very much in point occurred recently. The editor of a long-established, reputable insurance publication suddenly blacked out and became involved in a serious automobile accident and awoke to find himself hospitalized with critical multiple injuries. Here we have a situation where, utterly without warning, the victim blacked out just a few seconds before a crash in a car hurtling along through a busy intersection with an unconscious driver at the wheel.

After miracles in surgery, the victim recovered and, with the wisdom that frequently comes with the years, later realized that at the age of 71 he had no business driving a car in a congested metropolitan area surrounding a big city. Nevertheless in far too many states there seems to be a policy of *laissez-faire* which indicates "once a driver, always a driver." The net result is that we have behind the wheels of high-powered motor vehicles the aged, the lame, the halt and tragically enough, even those with seriously impaired vision. They are permitted to renew driver's licenses time after time with no thought of physical check-up or any requirements of their respective states for periodic examinations to determine driver fitness.

In reporting his own accident, the victim stated that he recalled slowing down and moving over into the right-hand lane to make a right turn. He noted a peculiar reaction at the time in that the lines on the road, which he knew to be painted white, suddenly appeared to be black. He recalls a sensation of the car bouncing over the center strip and then an ornamental utility pole "coming at me so fast I couldn't stop."

Before lapsing into a merciful unconsciousness he remembers thinking that the end had come and then complete blackness.

Our contemporary reports no knowledge of any pre-existing physical condition to account for any susceptibility to fainting spells—but it happened.

In a message to his own readers, the victim points out that there are probably millions of cardiac cases, diabetics and others driving cars at this moment to given instant. In addition, the factor of impaired given moment. In addition, the factor of impaired vision is also a corollary of oncoming years. In his reporter's report, the writer wisely suggests starting a movement voluntarily to give up driving unless very frequent physical examinations reveal no potential difficulty. Even then, there should be some age limit for drivers. "Much as I love to drive—to go places where I have never been before, I can never feel safe driving a car; I am 71 years old," the writer reports, "and shall not apply for renewal of my driver's license."

This publication joins with the victim, fortunately spared to continue his useful labors, in urging the passage of state laws throughout the country requiring a periodic physical examination with every application for license renewal. Even the very young can develop a physical condition which can menace themselves and other drivers and pedestrians.

There is no gainsaying the fact that if a lot of us would get off the roads, our street and highway toll would be reduced substantially.

Physical check-ups at intervals would be wise also for men in varying types of hazardous industrial jobs to remove them from harm's way *before* the horse is stolen, not afterward and at great expense to the community.

If railroad engineers must be examined frequently, why not—for example—crane operators? H.A.

KEY MAN in your crusade for safety

Eyes that are protected—*and see well, too*—are your best insurance against mishaps of all kinds: to worker, to costly machinery, to material.

6 adults out of 10 need visual correction of some sort. Just as many of your workers need it—if they're to perform their tasks comfortably, efficiently and safely.

Industrial management recognizes the great potentialities of eye safety programs which include visual correction. However, it sometimes is apt to pursue courses that result in considerably less than the maximum benefit.

The key lies with the eye care specialist. With him rests the responsibility of administering the corrective phase of an industrial vision program—just as the problem of prescribing drugs and other therapeutics lies with the professional in medicine.

A Bausch & Lomb representative may be of inestimable aid in the development of your own industrial vision program. He can help you in any phase: defining eye hazards, specifying protective equipment, establishing a full scale program employing the cooperation of eye care specialists in your area—for lowered costs, higher productivity, better employee relations as well as a distinguished safety record.

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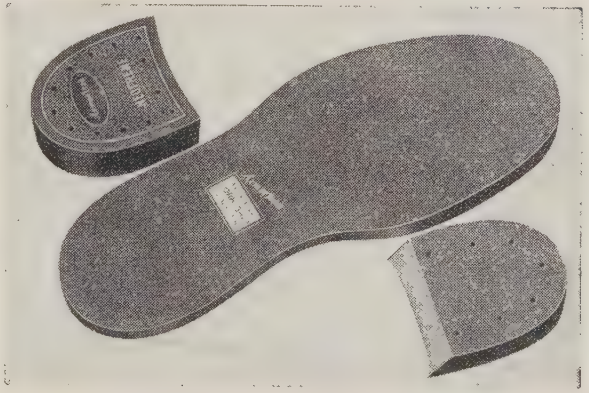

15-18-21-Irons—Blk and Brown

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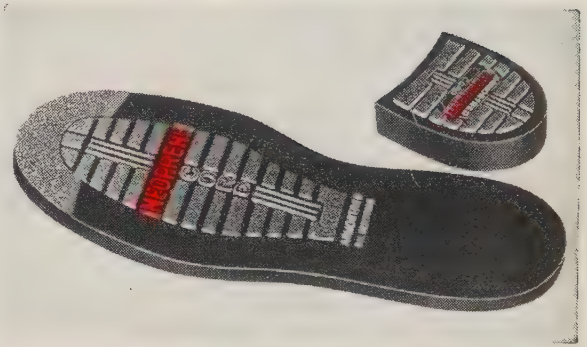

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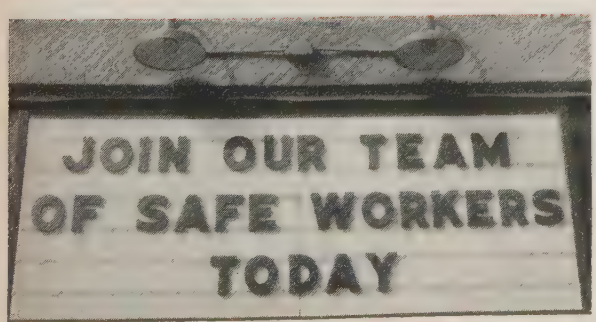
(For details, use Key # D-11 on card on page 85)

"our most precious resources" . . .

. . . teach safety to everybody

. . . build safety into the job



. . . sell safety all the time

. . . and our Safety Program for them . . .

By JOHN S. BUGAS
Vice-President, Industrial Relations
Ford Motor Company
Dearborn, Michigan

IT IS A GREAT TEMPTATION to approach the problem of industrial safety from an economic angle. Competition means cost-consciousness. In a buyer's market, the business enterprise must operate at razor-sharp efficiency. Lost-time accidents can weaken its competitive position just as drastically as slipshod management or an inferior product.

However, I would like to suggest that ***humanitarian*** considerations must always over-ride the economic aspects of industrial safety. As Benson Ford has pointed out, "People are America's most precious resource." All of us at our company subscribe to that statement 100 percent.

Our safety program is cost-minded in that it seeks the most in accident prevention for each dollar spent, but it does not—and never will—attempt to put a price tag on the life or well-being of an employee. Our safety program is production-minded and recognizes that only high productivity and volume sales can keep the Company healthy and prosperous. But safety is not subordinate to production; it is an integral part of the productive process. We insist on production with safety, not at safety's expense.

Within this broad framework of social responsibility,

the American businessman appears to have made a good deal more progress in industrial safety than in other areas of safety. One good reason for this progress is that in a plant we can exercise a reasonable degree of control over working environment. Accidents on the farm, in the home and on the road occur under relatively uncontrolled circumstances. In some cases—week-end traffic, for example—conditions may approach anarchy.

Nevertheless, it seems to me that many of the lessons we have learned in industrial safety can profitably be applied in other areas. The same weapons and techniques which have cut plant accidents so dramatically in the past 20 years might well be used against accidents in general.

With that in mind, I'd like to describe briefly the over-all safety program we have at Ford Motor Company. We don't claim any great originality for it. As a matter of fact, about all we've done is to "codify" and lay down as "law" a number of practices—some new, some of long-standing—in the company. Probably many other firms have similar programs. But, in laying out our program, I can perhaps provide benchmarks against which to measure the performance and prospects of other safety programs.

The 14 Points

Our safety program at Ford has 14 points. Some explain themselves, and some require a little explanation.

Point One is to get management at all levels behind the safety effort. If the boss is for it, the men all down the line will soon get the idea. At our Buffalo stamping plant, for example, the plant manager himself is the company's most ardent and enthusiastic safety spokesman. When he has something to say, he not only addresses the day shift; he comes back to give the same safety message to the other two shifts. Our plant managers are required to keep in close touch with and give full support to the safety program.

Point Two calls for the active participation of supervisors. Part of each weekly management session in our plants must be devoted to safety, and supervisory safety committees are required to hold monthly meetings.

Point Three needs no comment: each manufacturing and assembly plant must have at least one full-time safety engineer.

Point Four is: Sell safety to new employees. Every new employee hears a talk on safety problems and regulations in his area of work. This talk is given usually by the safety engineer. The employee's immediate supervisor then gives him an on-the-spot run-down of the safety requirements for his particular job. We recommend also that plant managers send letters on the subject of safety to all new employees. Incidentally, a modified form of this procedure is used for employees returning to the job after a prolonged absence for any reason.

Point Five is to re-sell safety over and over. Each supervisor talks safety to at least one of his men every day. We've found from experience that these man-to-man talks are more effective and productive than group discussions. *Safety becomes a personal matter* between each employeee and his supervisor.

Point Six in our program doesn't seem to have much bearing on safety at first glance. It is this: Maintain firm plant discipline. The reasoning behind this is quite simple. A plant where discipline is lax cannot be a safe plant. Lack of discipline means lack of control, and without firm control any safety program is just meaningless talk and gesture. An employee should never be subjected to high-pressure safety campaigns of rigid discipline, followed by disastrous letdowns. Consistently firm and fair enforcement of safety—and all other rules is the key to an effective safety program.

Point Seven is to build safety into the job. This, of course, means tools and equipment designed and engineered to be safe, making personal protective equipment and detachable safety devices unnecessary. We feel—as many others do, too—that the standards set up by various safety engineering groups must be regarded as *minimum*. Our own requirements are frequently more rigid than these generally recognized standards.

Point Eight is related to number seven: get the safety engineer's approval on new equipment, machinery, layouts and design. The changes, guards or devices stipulated by the safety engineer must be completely installed before operations begin.

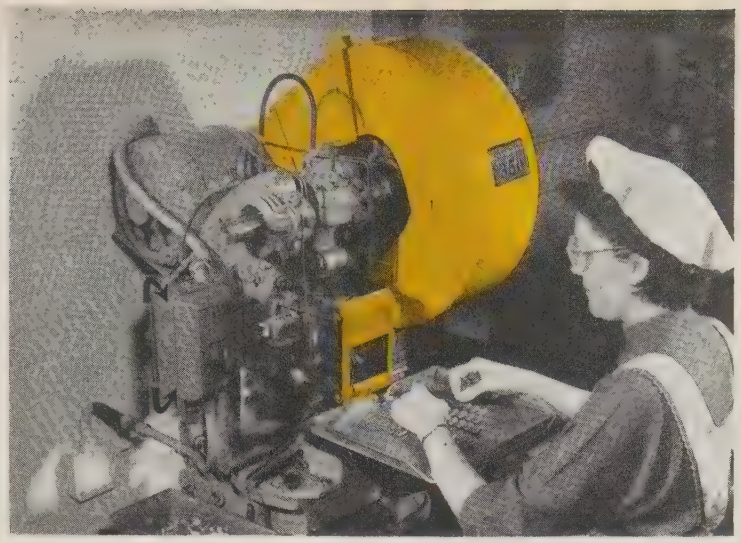
Paradoxically, we have found in recent years that eye injuries in manufacturing operations usually occur in areas where no eye-hazard is thought to exist. That is because the really hazardous jobs—spot-welding and grinding, for example—have had 100 percent protection for a long time.

Point Nine is that eye protection for employees and visitors must be afforded in all manufacturing areas of new plants. Some of the older plants present problems, but we are moving in the direction of complete eye protection in all plants.

Point Ten is the requirement that safety permits be issued to employees engaged in operations which might endanger others. One obvious example is the truck or tractor driver. In addition to his state license, the operator must have a company permit, and this involves passing a physical examination in addition to the usual technical requirements. Crane operators, railroad engineers and switchmen, and door-lifter and coke-pusher operators in the steel mill are examples of other occupational groups which must have safety permits. The issuance of these permits is the responsibility of our safety staff, on the request of supervision and with the approval of the medical section. The permits are not renewed automatically; holders must be re-examined at regular intervals.

It is pretty obvious that good plant housekeeping not only means economy and efficiency, but greater safety as well.

(Cont'd on page 26)



Color guards this punch press with bright yellow over the flywheel guard. Arrows point to switchbox which is painted red for easy identification. Yellow also marks the magazine guard, while the rest of the press is colored an eye-resting share of green.

THE LOWEST ACCIDENT RATE of any comparable factory in the country is only one result of using color in its plant says the Master Lock Company of Milwaukee. Just as important is the 33 years of excellent employee relations, improved housekeeping and servicing methods, and streamlined production techniques.

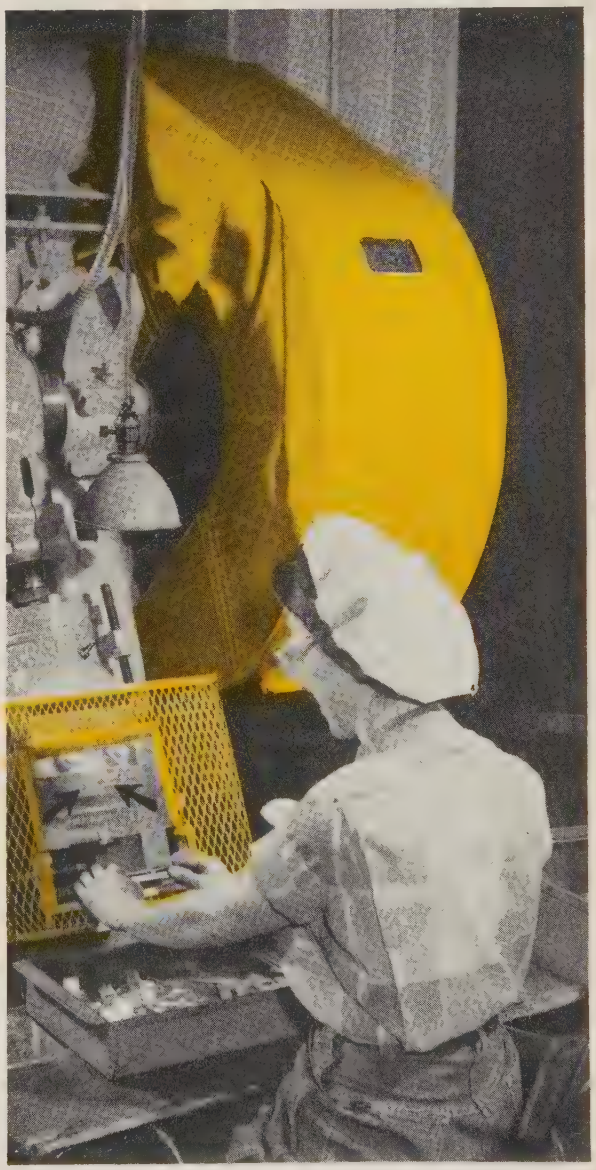
Perhaps just as noteworthy is the fact that this homegrown program of color dynamics has stumped some experts, anticipated others, and violated most conventional factory practices. A look into the plant shows just how unique this color program really is.

Giant padlock making machines are painted in flamboyant brights to show dust and soot rather than hide them. Pipes and conduits, usually painted to blend unobtrusively into walls and ceilings, shout in iridescent greens and yellows. Pale pinks and deep wines, buffs and yellows, sea-foam greens and pastels of all shades are splashed about in a symphony of color covering nearly all of the 227 thousand-square foot plant.

The program is the outgrowth of an employee relations program uniquely geared to a single theme: Femininity. Sixty percent of the work force are women. But the all-pervading use of color at the plant has become a major tool of production, too, playing a sig-

(Continued on page 24)

We've lived . . . with Color a long time and liked it!



Yellow is warning color here, so belt and flywheel guard and wire mesh cage are painted that color, while arrows indicate red around die.

Man performing chipping operations shown here, has extra protection against flying chips in nose shield on safety glasses.

By COLE ALLEN *

EYE PROTECTION SERIES
more articles in May and June

AN EFFECTIVE

For such work as this, any worker needs both goggles and respirator for complete protection against dust and fumes.

KEYING THIS DISCUSSION TO THE "SMALL PLANT" is deliberate. There is preponderant evidence that the small plant has critical need for such a program. (Of course, the large plant which does not have such a program has similar need to recognize its eye hazard problem.)

There are varieties of statistical exhibits which seem to demonstrate that small plants produce the greatest frequency of occupational accidents—about 2 and a half times the frequency of large plants is the reported relative proportion. That large part of occupational mishaps that affect eyes, follows the same development pattern—the small plants produce them at a faster rate than do the large plants.

Regardless of how much basis there may be for debating the numerical accuracy of any set of statistics, I suggest that we accept as valid, these observations: small plants are producing a whole lot of eye injuries; they are producing more than expected in relation to the hazards and exposures in their plants; there is not much evidence that the small plants are doing anything about the matter; they ought to be doing something.

In order to avoid some of the controversy that usually develops when someone endeavors to define a small plant based on number of employees, I propose to concern myself with the type plant that is small by virtue of one-level management. It is a one-man management. The top man whether he carries the title owner, manager or superintendent, runs the whole show.

I don't believe we can separate eye accident prevention from the overall plant safety program. Practically every hazard produces injuries to the eyes under some combination of circumstances. Thus the basic strategy is to control hazards.

There is, of course, justification for treating the eye accident prevention program with special emphasis. Eye injuries are among the irreversible type injuries, and those in the more serious categories are dramatic. There usually comes a time when every plant needs to take stock of its eye injury situation and put its controls on

* Mr. Allen is a divisional engineering manager for a leading insurance company.

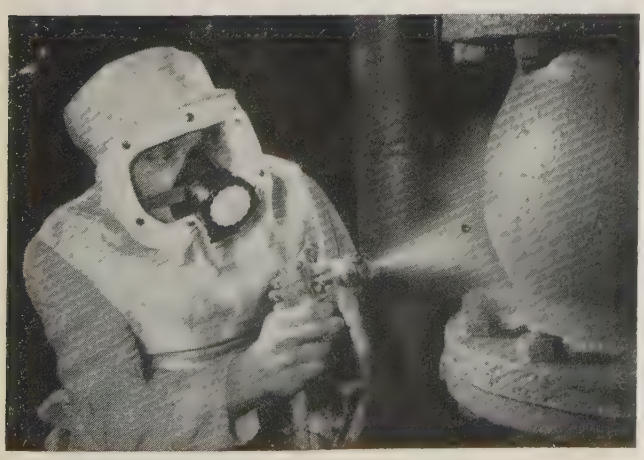
For the SMALL PLANT . . .

Grinding machine operator in picture at right wears wide-vision "panoramic" goggles for his job. His is only one of many occupations which must have eye protection for the worker's safety.

YE PROGRAM

a positive basis. Because of the prominence of inherent eye hazards in a plant's operations, the control of eye injuries may loom as the most important feature of the plant safety program.

A small-plant manager can utilize the wealth of published material on eye hazards and controls obtainable from outside sources to guide himself in the development of an effective program. The American Standards Association Code Z-2, National Safety Council Safe Practice Pamphlet #14, and Bureau of Standards, Handbook 24 are particularly good. Other sources of reference material are the National Society for the Prevention of Blindness, optical companies and insurance companies, to mention a few.



The combined respirator and hood worn here by a paint spray operator serves as protection for his eyes, nose and skin.

The survey can be made of plant processes, equipment and physical conditions to identify hazards that have a potentiality of eye injury. In addition to needing positive mechanical or structural corrections, these hazards may also make it advisable that some sort of eye protection be worn by exposed workers. The experienced surveyor will recognize readily where some shielding or enclosing all processes will reduce greatly, although not eliminate entirely, the need for eye protection by the workers.

STEPS OF GOOD EYE PROGRAM

1. *Survey of plant equipment and operations to identify the eye hazards.*
2. *Determination of methods of controlling eye hazards at source and requirements for personal eye protection.*
3. *Formulation of a plan (a) for continuing control of eye injuries by shielding, enclosing or otherwise safeguarding hazards and (b) for the use of eye protection.*
4. *Inauguration of the program.*
5. *Follow up of the program.*

The American Standards Association has identified 8 groups of processes or operations that require, not just eye protection, but eye protection of certain distinctive characteristics. While records verify that most compensable eye injuries occur when the eye is struck by some solid object, enough damage is caused by corrosive liquids and by harmful radiations to warrant particular attention to those sources of eye damage. (See table on next page).

The American Standards Association classifies the following sources of eye damage:

Group A. Processes where protection is required from relatively large flying objects. Examples are chipping, caulking, riveting and sledging where there is a likelihood of heavy impact from a large particle.

Group B. Processes where protection is required from dust and small flying particles. Operations involving scaling and grinding metals, stone dressing and some woodworking where moderate impact is likely are examples.

Group C. Operations where protection from dust or wind are required. Examples are truck driving in open cabs, electric spot and butt welding where there is no exposure to radiant energy.

Group D. Processes where protection from splashing metal is required such as babbitting, pouring of lead joints, metal casting, soldering, dipping in hot metal baths.

Group E. Processes where protection to eyes from gases, fumes and liquids is required such as handling of acids and caustics, plating, acid etching, etc.

Group F. Operations where protection from reflected light or glare is required. Examples are long exposure to snow covered ground, reflected sunlight from roofs and road beds.

Group G. Processes where protection from injurious radiant energy with a moderate reduction in intensity of the visible radiant energy is required. Examples are oxyacetylene and oxyhydrogen gas welding and cutting, electric furnaces, steel making furnaces, electric resistance welding, brazing.

Group H. Processes where protection is required from injurious radiant energy with a large reduction of the visible radiant energy. Examples are electric arc welding and cutting, ultraviolet light exposures, hydrogen welding.

The American Standards Code prescribes also the specific type protection that is effective for the exposures, which may be specific style goggles, helmets, shields, face masks or hoods.

There are many advocates for all-inclusive 100 percent goggle programs for the production areas of industrial plants. I believe this provides optimum protection and approaches the absolute in protection. It should be the ultimate of every industrial plant eye safety program. It is acknowledged that some phases of production activity are relatively less hazardous than others. However, when one considers the factors, extraordinary as they have been in many instances, that have produced permanent eye damage, it is doubtful that one could state with any validity that there is a production operation that is 100 percent free of eye hazards.

The conditions revealed by the plant survey may lend strong support to the enactment of a fully-protective goggle program. Certainly, if the operations expose the majority of the workers to eye injuries directly or indirectly, there is a logical basis for instituting such a goggle program initially, without a progressive build-up to full protection over a period of time. The strongest advocate of the 100 percent goggle program is the unfortunate who has lost his vision on one of the supposedly less hazardous work assignments.

The success of any goggle program in the small plant seems to depend largely on the self-discipline of workers. There is probably little direct supervision of plant activities, since so much of the employer's time is diverted to other functional activities. Yet, by having no intermediate supervisory level, the employer is usually in closer personal relationship with his workers and in a position to gain the benefit from any leadership ability he may exert.

With the hazard survey completed, the operations needing eye protection identified, and the approved type of protective equipment determined, the employer is ready to plan the details of his program.

It would be well at this stage to invite contributions by employees. Employees selected could very well be senior workers, influential and respected workers and the shop steward, if the plant is unionized. The value of such employee participation in the planning will be in greater evidence when the program is launched. Where the workers have had a part in the formulation of the plan, they are more ready to accept the program and to cooperate for its success.

The broader the base on which the program is erected, the sounder the program will be. It is equally

Goggles and safety clothing are necessary protection from the splashing of molten metal being poured in this picture.

as important that all facets of the program be identified with recognized principles of good organization and management. This gives the program a purpose and a validity.

The detailed planning needs to include:

1. Decision on the adoption of standards for the processes and equipment which have the necessary safeguarding of inherent hazards built in to control eye injuries at their source. In other words, make the job safe in the one best way.

2. Decision on the institution of plant maintenance and systematic inspection procedures as a control to assure

Safety glasses shown here provide protection for riveter against flying metal chips, an important hazard as he goes about his work.

that processes and equipment function are at all times consistent with the predetermined standards.

3. Decision whether to enact a 100 percent goggle program or a selective program.

4. Decision on the enforcement of the program, whether it is to be optional or mandatory. If the program is worth adopting it should be applied without exception. Consequently mandatory use of eye protection brings the best results. If the employees are unionized, union support of the program is most desirable and can usually be obtained. The better the employer is able to convince workers of the wisdom of the program, the less problem there is to enforcement.

5. Decision as to the most suitably designed personal protective equipment and where to procure it.

6. Decision on the need and arranging for prescription lens goggles for those workers requiring such special features. It has been estimated that approximately 70 percent of workers may be found in this category.

7. Decision whether to use optometrists and ophthalmologists as staff consultants for professional assistance

Welder with safety helmet and built-in, anti-glare goggles is adequately protected against all the serious eye hazards of his job.

in choosing, fitting, servicing goggles and in prescribing lenses. The employer would do well to use them.

8. Decision whether management bears the full cost of the eye protection equipment, shares the cost with the worker or passes the full cost on to the worker. Best results seem to develop where management assumes full cost. It involves less complication in bookkeeping and in relationships.

9. Decision on maintenance plan for goggles which includes systematic cleaning, sterilization, inspection, repair and replacement. It also includes schedule of reexamination of eyes of workers requiring prescription lenses and correcting when necessary.

10. Decision on control procedures to measure accomplishments and to improve program by using records of all eye injuries, investigation of causes of such injuries, and establishment of safeguards against recurrences of injuries. If the program is effective there should be very little additional work load created by this function.

11. Decision on establishing and maintaining appropriate first-aid and emergency care for injured eyes. The ophthalmologist or physician, to whom plant eye injuries are referred can assist in setting up this control against aggravated damage to the eye from the mishandling of first-aid by inept persons.

12. Decision on method of launching the eye protection program to achieve maximum acceptance and cooperation from the workers. This might consider advance notices in the form of a letter to each employee, a pay envelope insert notice, a propaganda spread of appropriate safety posters and notices on bulletin boards, a safety rally of all workers as the jump-off, with an inspirational shove by a speaker from the outside or an appropriate film. Such an employee stimulus should not be a one-shot proposition. In line with management's interest in constantly increasing the personal

(Continued on page 56)

Life With Color
(Continued from page 19)

nificant role in everything from plant maintenance and safety to department identification.

In 1937, when color dynamics was just entering the industrial field, a number of company engineers were sent on tour to various plants throughout the country to "see what this color business is all about."

They were particularly interested in color's psychological implications and the promise it held for eliminating the dreary "factory-ish" atmosphere seemingly inherent in manufacturing. The creation of cheerful working conditions is always a weighty concern for factory management. When your work force is composed mostly of women, it becomes a top priority matter.

The "task force" of engineers came back with mixed reports. Some of what they saw looked good, but not all. The group experimented with colors and shadings, modified what others were doing, started out on some new approaches.

For example, they were among the first to experiment with yellow as a danger color, in place of red. Some of their findings modified safety standards set by city and state codes and by insurance companies.

Two standards were used in determining the efficiency of a particular color or color combination:

1. How the worker reacted directly. The girls were asked their opinions, with changes made according to what they liked or didn't like.

2. How the worker reacted indirectly. Careful records were kept to see how the worker production varied with the color experiments.

The engineers worked with several paint manufacturers to develop their own color tones and shadings. Not only the psychological effects were tested, but also, from a practical point of view, the wearability of the color. In the early stages, for instance, they tried soft tone blues on the machines. They found however, that the combination of this shade and the hum of the machines had a drowsing effect on the girls. What finally developed was an eyerest green for the machinery with buff and yellow to point up guards and other units.

Unlike other factories where machines are painted in dark shades so the dirt won't show, the company uses bright tones—to make dirt stand out. The reason: "If they see the dirt, they'll clean it." And they do. The plant is immaculately clean —although there is no company rule requiring girls to play housekeepers.

"Pastels," Said Girls

Interestingly enough, the extensive use of pastels was the unconscious selection of the girls. Trial and error with various colors disclosed an objection of the women to strong, domineering colors. The soft, delicate pastels were found to be more appealing, less disquieting. By the same token, the company has found that pinks and reds (at least in pastel shades) are not as psychologically upsetting as many authorities claim. They are used repeatedly to break up and highlight solid color combinations. For example, reds on light switches break up the wall monotony.

Similarly, pipes and conduits are painted in contrasting colors to make them stand out from walls and ceilings. Not only does the color break up the color scheme, but it makes the piping easier to detect for servicing. Furthermore, color serves as a coding system. Thus, a steam pipe is distinguished immediately by its color from an air pipe line, an electrical conduit from a heating duct, and so on.

Color also serves a valuable purpose in production. Each department has its own code color which is used on all of its equipment and production charts. This accomplishes 3 things:

1. It enables a foreman or worker anywhere in the plant to look at the containers in which a production piece is carried and tell exactly what stage of production that piece is in.

2. The system makes it possible to identify sizes and production steps within a section.

3. Colored waste baskets, tools, chairs, etc., tend to stay in their own departments, making inventories easier.

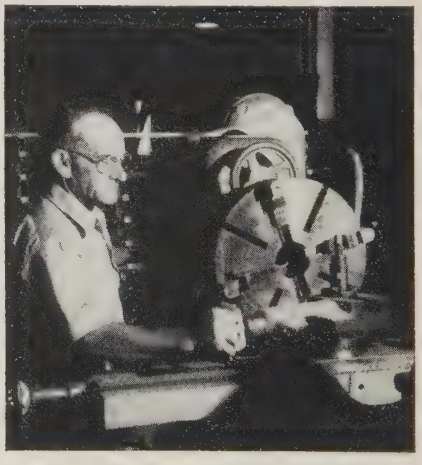
Toujours Gai

The color-for-housekeeping idea is also carried into employees' locker and wash rooms. Gay colors in these rooms keep the workers in a pleasant frame of mind before and after work.

Perhaps the apex of color harmonies at Master Lock has been achieved in its lunch room of chartreuses, yellows, and iridescent green with matching and contrasting tables. Opened only a short time ago, it was hardly ever used by the workers until management discovered that the employees thought it was intended only for company executives!

"Employees spend the most important part of their lives here," a company official has said. "We feel it our duty to make our plant a 'home away from home' for them. Cheerful surroundings mean a lot, and color looks like a good way to achieve it."

Pictures by courtesy of Master Lock Co.



Color Code Cuts Accidents

ACCIDENTS are few and far between in the field maintenance shop shown in the picture above. Safety-conscious personnel of the Corps of Engineers of the U. S. Army employ the "color-dynamics" principle at the Yuma, Arizona base. Here, a civilian shop foreman operates a power lathe with color-coded controls to facilitate faster, safer operation. All power tools in the shop are marked in this same way. Safety lines and danger areas are also marked by color.

Picture by courtesy of Corps of Engineers, U. S. Army.

A Sanitation Man's Nightmare

By JOHN J. DONAHUE
Supervisor, Plant Sanitation Section
Technical Facilities & Services
Research Laboratories Division
General Motors Corporation

THE HUGE GENERAL Motors Technical Center is located over 800 acres in Warren, Michigan. Eventually, it will be the workshop for more than 3500 engineers, researchers, stylists, designers, mechanics and other specialists designed to better the corporation's products, make them cheaper, and keep them up to date or ahead of the field.

Upon completion, this giant center will embrace 25 buildings, from gatehouses to large laboratory, office and shop buildings. The maintenance of much of this is the job of the plant sanitation section. It is a large and important task, concerned with the health, safety, welfare and morale of all our employees. We are at present maintaining about 500 thousand square feet, and expect to increase this to 750 thousand upon full occupancy. Our total cost for plant sanitation last year was $213,518.08 or 43 cents a square foot. We hope this year to cut that cost, through the use of better materials and new methods.

Our work is cut out for us and the responsibility rests with those assigned to it, for our function is direct and centralized. Here are some of our duties and how we accomplish them.

Our present staff consists of 4 foremen and 61 wage employees. Nineteen on the day shift are supervised by one foreman, while 42 on the night shift get their orders from the remaining foremen. Naturally, the latter shift is the one on which most of our work is performed. All janitors are trained on the job. This method, while satisfactory, leaves something to be desired. We have hopes of changing this procedure to include classes and training films later.

We have several pieces of mechanical equipment—one 36-inch power sweeper and one 37-inch autoscrubber. They sweep and scrub about 40 thousand square feet in an 8-hour shift. We also have disc polishing and scrubbing machines, and wet and dry vacuums. We are trying to standardize on this type of equipment.

A wall washing machine, operated by a single janitor washes 1500 to 2000 square feet per 8-hour shift. We share the window washing load with another section, but we wash all glass partitions. All lighting fixtures are washed two times a year and lamps are group replaced once each year. Spot replacements are made once a week. We also replace refillable dry type building air conditioning filters.

Most of our supplies are purchased on company specifications or direct from manufacturers offering contract prices. When the supplies are received, they are checked by our day shift stock room attendant. This attendant also has the job of checking the various service rooms each day to see what supplies have been used since the preceding day and replenishing stock that is low.

The start, finish and consumed time of all project work is recorded. All materials used and labor expended are recorded and a report filed at the end of each month. This provides us with a check rein and serves to keep us cost conscious. In addition, any excessive costs spur us to study the task for ways of

eliminating lost motion. Once the quality level of any job has been set, it is the responsibility of the respective foreman and myself to inspect areas and work underway to be sure of the maintenance of our quality level. A file is also kept on all sample or test materials which help us determine the material we are to use in the future.

Our Problems

As examples of the sort of problems we have, let me describe what is done in three buildings we maintain.

The Research Manufacturing Building is occupied by the Process Department and its related sections, such as Heat Treat, Welding Sheet Metal, and Pattern Shops. It also houses the research experimental garage, Plating Department, Special Problems Department, Shipping and Receiving, Instrumentation and Technical Facilities, Services Offices and the Cold Room. In this building we have over 130 thousand square feet of maple flooring which varies in lengths of 6, 9 and 12 inches. It is 2 inches thick and laid in mastic. The floor is finished with an emulsion type penetrating seal over which we place two coats of a fast dry (35 percent solids) surface seal which impart a high gloss. This floor has never had any water on it except spillage. It is dust mopped daily with a treated mop. It is cleaned with an emulsion seal and steel wool pads underneath a disc machine. Afterwards it is allowed to dry 2 or 3 hours before the surface seal is reapplied.

In the high bay area of the Engineering Research Building we have 10 thousand square feet of end grain yellow pine flooring which is finished in the same manner as the maple flooring. This floor was recently refinished by stripping the application of a penetrating sealer and two coats of surface seal. This was necessary because it was improperly finished by the flooring contractor who applied a paste wood filler instead of a liquid filler. This caused the surface seal to blister and peel. Prior to stripping we attempted to get bids on sanding of this floor and the best price obtained was 18 cents per square foot, sanded but not finished. Our janitors stripped this floor using a seal and varnish stripper, applied penetrating and two coats of surface seal at a total cost of 14 cents a square foot.

On our resilient flooring a program has been set up to provide for stripping every four to six months. It has been proven that more floors have been washed away than walked away. After trying several water waxes, we turned to the synthetic type floor materials, after learning that they required less buffing.

We have still a long way to go in plant sanitation. Many new techniques and materials are still needed, but we feel our sights are set in the right direction to overcome our maintenance man's nightmare!

From an address delivered at the 6th Plant Maintenance & Engineering Conference.

Our Precious Resources

(Continued from page 18)

Point Eleven for that reason calls for planned and thorough housekeeping practices.

Point Twelve calls for a comprehensive inspection system, ranging all the way from our central safety staff, which makes general reviews of the program, down to the man on the job, who is expected to keep a careful eye on his tools or equipment at all times and to report potential hazards at once.

Since superstition has no place in a safety program, I have no hesitation in offering:

Point Thirteen. It is the requirement that all accidents be promptly reported. This is not so we can show how good—or how bad—we are through accident-rate statistics. We do it so that we can take swift action to clear up real or potential trouble spots. The incidence of certain types of accidents, the plant areas where they occur, the kinds of jobs on which accidents occur, all help to provide us with a sensitive safety barometer. And unlike the conventional weather barometer, they give us information we are able to do something about. Given accurate information, we can make our own safety climate.

Point Fourteen is publicity: we try to talk safety through all the media at our command. Safety posters and displays, both simple and elaborate, are used to good effect. Such devices as the "days-without-a-lost-time-accident" board help to arouse employee interest and enthusiasm. Plant newspapers are extensively used. At Ford each issue of every employee newspaper—and we have 30 of them—contains at least one article on safety. There are also many excellent motion pictures on safety which are widely and effectively used.

So much for our 14-Point Safety Program. I imagine many of the points sound very familiar. Since they may be regarded as our common property in the field of industrial safety, I urge that we think them over carefully with a view to seeing whether many of them might not be equally or partially adaptable to other safety areas.

Pictures by courtesy of Ford Motor Co.
From an address delivered before the Detroit Industrial Safety Council.

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When tired it's PLAIN HORSE SENSE to

STOP FOR A REST

or you'll REST FOREVER!

the facts of life

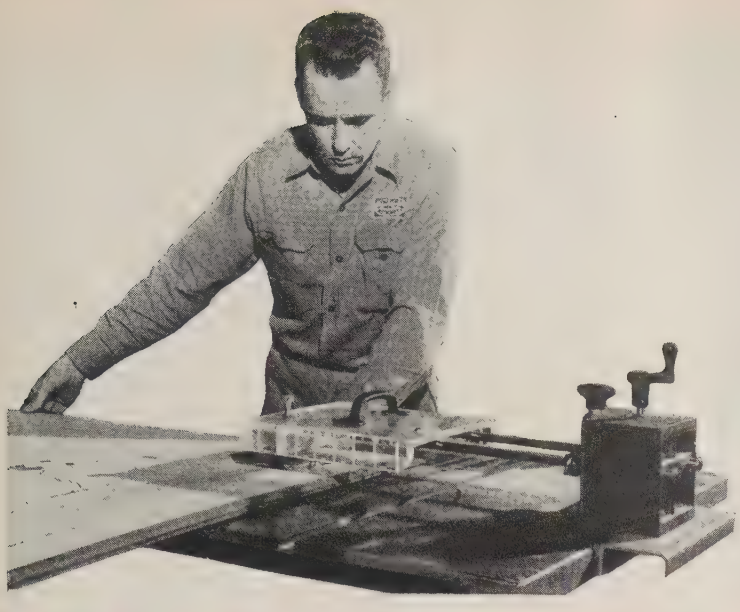
about cancer

The facts of death from cancer are all too familiar. Too many have known the tragedy of losing a family member... a friend... a fellow worker. Too few know the facts of life about cancer. Yet they are there for the asking... or the seeing... or the listening. The American Cancer Society teaches life-saving facts about cancer every day of the year. Through films... pamphlets... exhibits... window displays... via radio... television... newspapers... magazines... from lecturers... information centers... you can learn vital facts that might one day mean the difference between life and death.

The American Cancer Society maintains the first line of defense in the battle against man's cruelest enemy. Teaching you how to protect yourself and your loved ones from death by cancer, supporting research in more than 100 medical and scientific centers, keeping your doctor informed of new techniques of diagnosis and treatment are but a few of the Society's many functions, all of them directed to the ultimate conquest of the disease.

Don't turn away from the facts about cancer. They can be the facts of life for you and your family. Visit the American Cancer Society office nearest you, or write to "Cancer" in care of your local Post Office.

American Cancer Society



Another
Safety Maintenance FIRST

New York Port Authority worker is shown in photograph at left using new saw guard in one of the municipality owned shops.

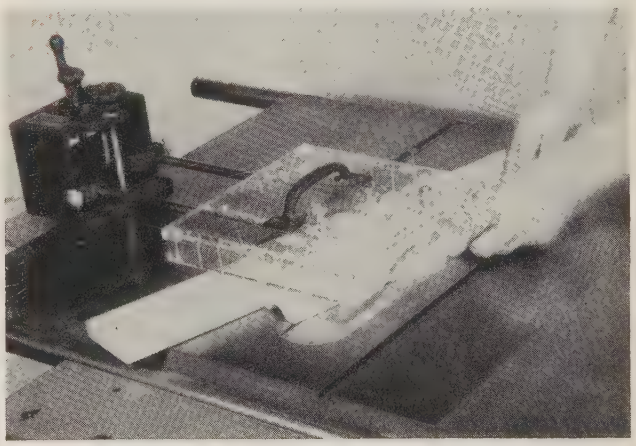
A New Approach TO SAW GUARDING

THE VERY IDEA of letting a blind man operate a circular saw would give most safety engineers and safety directors nightmares. Yet, with careful training and precautions and almost superhuman patience, the blind can be taught to perform some of the simpler table saw operations. However, many of the headaches and heartaches in this difficult training may be dispelled by a new type of woodworking saw guard. In fact, the guard is already being used in vocational training schools for the blind.

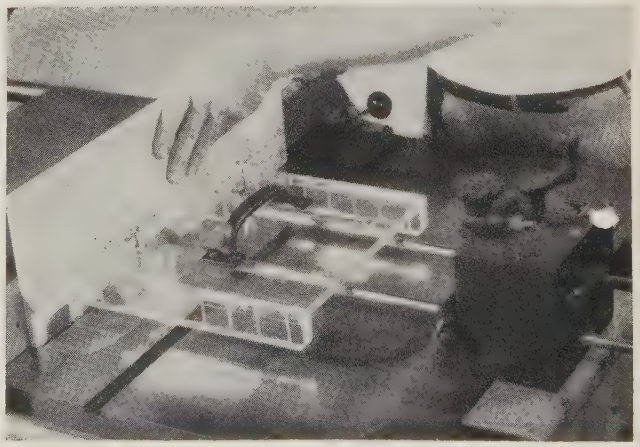
Of course, it isn't necessary to cite such an extreme example as that of the blind man operating a circular saw to indicate the need for guards. The inherent dangers of working in close proximity to a sharp edged saw revolving at high speed are all too obvious. That these dangers have been recognized is evident in the safety codes and rules drawn up by insurance companies, governmental agencies and the American Standards Association. These regulations have accomplished a great deal in making circular saws a safer production tool.

Despite these advances, however, the problems have not been wholly solved. The wood products indus-

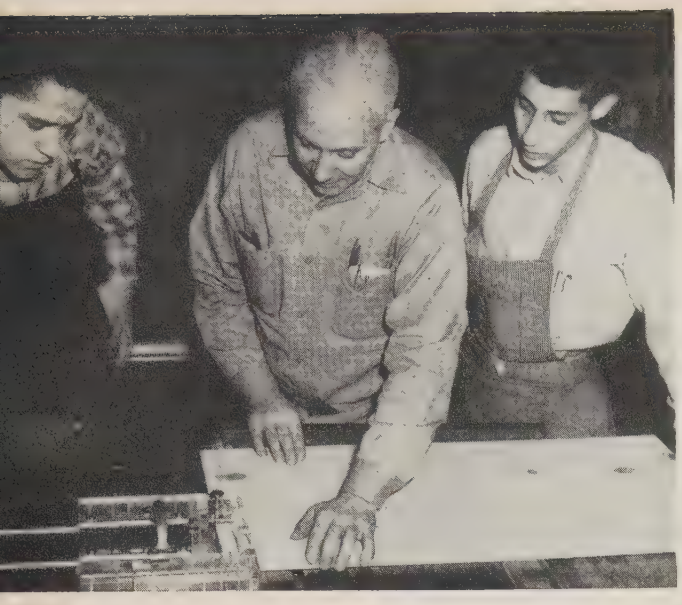
Guarded: even problem jobs!



Diagonal sawing: Guard can perform this from several positions.



Rabbeting: Shield presses stock against rip fence as combination guard-guide.

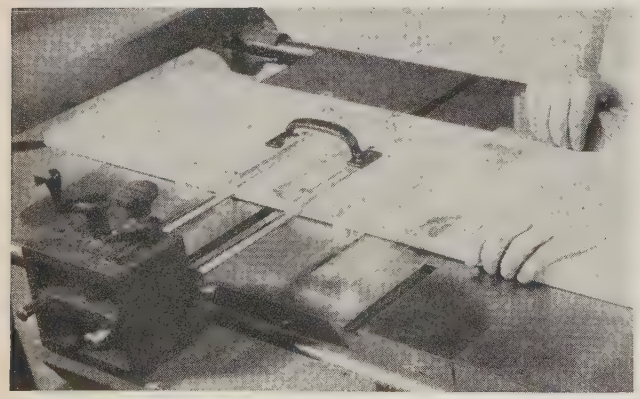


Frank Bretthauer, inventor of new guard, shows students at Chelsea Vocational High School in New York City how to cross-cut wide boards with the guard. It was at this high school 3 and a half years ago that Mr. Bretthauer started his project. Plastic guard can be used on many table-saw operations to conquer saw hazards.

Different Jobs: different guard positions

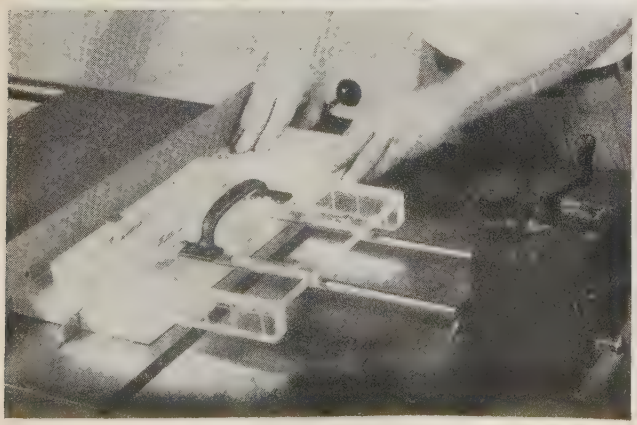
POSITION 1

Clear plastic guard can be operated from any of 3 positions, or for angled work. Short crosscutting, shown here, can be done in other 2 positions shown below. Work can be seen at all times through the guard itself.



POSITION 2

Long crosscutting in position shown at the left, is only one of many power table saw operations which can be done with protection from this guard. Guard is set to just clear the stock in this type of saw operation.



POSITION 3

Ripping, which can also be done in position 1, is pictured at left. Clear plastic guard can also be used as a pressure plate for angular work, besides guarding of most operations in its normal positions.

try still continues to have one of the higher accident rates. Furthermore, the use of the table saw is not confined to just that industry alone. A very large percentage of the factories in this country, no matter what their final product may be, use table saws in their carpentry or maintenance departments, even if not in the production departments. How many more accidents can be charged to these saws that are outside the wood products industry? How well supervised and guarded are these saws, that are really just on the sidelines?

And now we have the do-it-yourself craze sweeping the country. How many junior-size table saws are there in home basements and garages? And what sort of guards do they have? It is no wonder that both industry and insurance companies are taking an increasing interest in off-the-job accidents which can keep a man off the production line just as effectively as an on-job mishap.

Present Guards

Most of the guards now in use on table saws are metal hoods that enclose the saw blade and ride on top of the stock as it is cut. When used, they have been successful in lowering the accident rate by preventing contact with the blade and by containing flying splinters or broken saw teeth.

The installation of these metal hoods was necessary for the safety of the operator; but a certain amount of production efficiency had to be sacrificed for safety. The metal hood made it impossible to see the actual sawing operation. Some types were mounted so that the guard could be lifted up to permit inspection or adjustment of the saw blade, but for some operations such as rabbeting and dadoing the guard interfered with the work and had to be removed entirely.

Human nature being what it is, there is a tendency for operators, over a period of time, to become careless about putting the guard back on after it has been removed

for some operation on which it could not be used. The temptation, then, is to leave the guard off entirely. There is also the psychological factor that a guard which can be used only part of the time begins to lose its importance in the mind of the operator. So again he is tempted to dispense with the guard.

New Approach

One answer to the mechanical and psychological problems of guarding a circular saw is the new safety guard developed by Frank Bretthauer, an instructor at Chelsea Vocational High School in New York City. It is a challenging approach because it takes advantage of one of the weaknesses in the use of former metal hoods: it makes the guard so easy to move that the operator is encouraged rather than discouraged to change it from one position to another. He gets into the habit of using it because it guards and assists him on all table saw operations.

Basically, the new guard seeks to accomplish three things: 1. To be suitable for practically all operations on a circular table saw; 2. To be easy to install and use; and 3. To permit the operator actually to view the sawing operation. These goals are in addition, of course, to the traditional safety features of preventing contact with the blade and of shielding the operator from flying splinters and broken saw teeth. It has already been approved by state industrial approval boards.

The new guard * protects the operator not only in such operations as ripping, plowing, short crosscutting, long crosscutting and mitering, but also in work that has been difficult or virtually impossible to guard, such as plowing, rabbeting, tenoning, drop sawing, diagonal sawing, tonguing, template cutting and feathering. This versatility is made possible because this unique guard is designed for use in three different positions on the table and can be easily changed

* A source for further information concerning this guard can be obtained on inquiry to the Editor.

Scott Air-Paks
Cut Repair and Maintenance Costs, Safely!

SAVED
from Complete Plant Evacuation and Production Shut-Down

• This manufacturer of a chemical product had too many costly experiences resulting from leaks of ammonia and chlorine. It meant complete evacuation of personnel, opening windows to lower gas concentrations and prolonged attempts to fix the leaks by workers wearing inadequate cannister masks. Repair work was painfully slow because repairmen had to make frequent trips to windows for fresh air. It was a costly procedure.

On Hazardous Jobs Scott Air-Paks Help Management and Labor Breathe Easier

Now — equipped with Scott Air-Paks, repairmen are able to make quick repairs with complete breathing safety. Evacuation of personnel is unnecessary. Result: no lost time — no production losses. The Scott Air-Paks have paid for themselves many times over!

Do you have a similar problem? Then write for the free booklet "Scott Air-Paks Save Money, Man Hours and Men for Industry."

SINCE 1932 Scott FOR SAFETY—FOR SERVICE

SAFETY EQUIPMENT DIVISION

SCOTT AVIATION CORP.

217 ERIE STREET LANCASTER, N. Y.

Canada: Safety Supply Co., Toronto — Branches in principal cities
Export: Southern Oxygen Co., 15 West 57th Street, New York 19, N. Y.

(For details, use Key # D-15 on card on page 85)

from one position to another. Materials which combine strength with lightness in weight are used in place of the heavy metal that made former hoods cumbersome to remove and replace.

The shielding guard itself is shaped like a shallow box over the saw and is made of ½ inch thick transparent plastic such as is used in aircraft construction. This clear plastic hood allows full visibility of the work at all times. Instead of being attached directly behind the saw, it is held in place over the saw blade by means of two steel rods that extend out from an adjustable mounting base at the edge of the table. As noted previously, this cast aluminum base can be positioned on three sides of the table and is held in place by two lugs and a threaded spindle that are inserted in three holes drilled in the table. If the operator wishes to adjust the shield, the base does not have to be removed.

The plastic shield and its supporting rods can be adjusted horizontally from the mounting base or vertically from the table. It can be locked rigidly in place over the saw so that it clears the stock or it can be adjusted to exert either sidewise or downward pressure on the stock. This latter feature helps hold the stock in place during some types of operations and helps prevent kickback of the material. As a further antidote for kickback, the plastic shield has a kickback plate with an adjusting pin to regulate the height of the bottom dogs. If a stop pin is needed for cutting pieces to the same length, an 8d nail can be inserted in one of the several holes along each side of the plastic hood.

The whole guard has been designed to hold the shield rigidly in place. If jammed stock, a broken saw or some other excessive upward pressure should be made against the hood, the force of the pressure might damage the guard. As a safety device, therefore, a brass bushing on the height-adjusting spindle provides relief against excessive pressure.

The patented guard has been developed after three and a half years of experimentation. It is available commercially for saws ranging from 6 to 16 inches in blade diameter. The manufacturer states that the device has been approved by the New York State Department of Labor, Board of Standards and Appeals and the Oregon Industrial Accident Commission and approved for use in military installations and government agencies. It has undergone extensive field testing in industry with, to quote one user, "entirely satisfactory" results. It is being used in vocational high schools and in schools for the blind.

Maybe the blind can't see, but this guard is helping even them to saw safely.

Top picture on first page of article by courtesy of The Port of New York Authority.

Compensation Laws

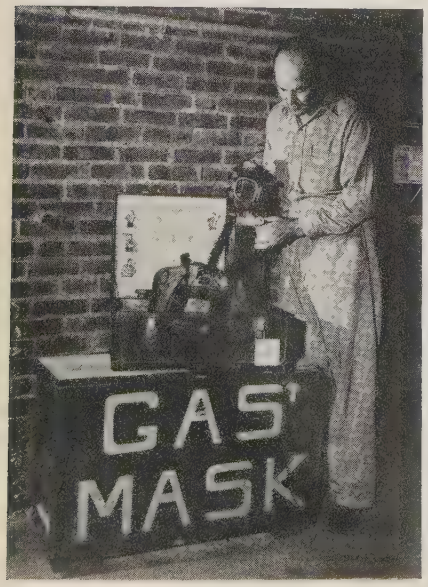
THE LATEST publication summarizing State workmen's compensation laws has just been released. Bulletin No. 161, "State Workmen's Compensation Laws As of September 1954," is now available from the Bureau of Labor Standards, U. S. Department of Labor.

This bulletin is a revision of Bulletin 125 published in 1950. It presents the major provisions of State workmen's compensation laws and contains tables comparing various provisions in the State laws, including the type of law, occupational disease coverage, waiting period, and different types of benefits. This bulletin is a handy reference for legislators, administrators, insurance carriers, labor and employer groups, and others.

Single copies of this bulletin may be obtained from the Bureau of Labor Standards, U. S. Department of Labor, Washington 25, D. C. Sales copies are available from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., for 25 cents each. A discount of 25 percent is allowed on orders of 100 or more. Remittance should accompany the order for sales copies and should be mailed directly to the Superintendent of Documents.

"Safety Maintenance" Salutes A SAFETY IDEA

Sudden Need . . . Labeled Safety Equipment Easily Seen . . .



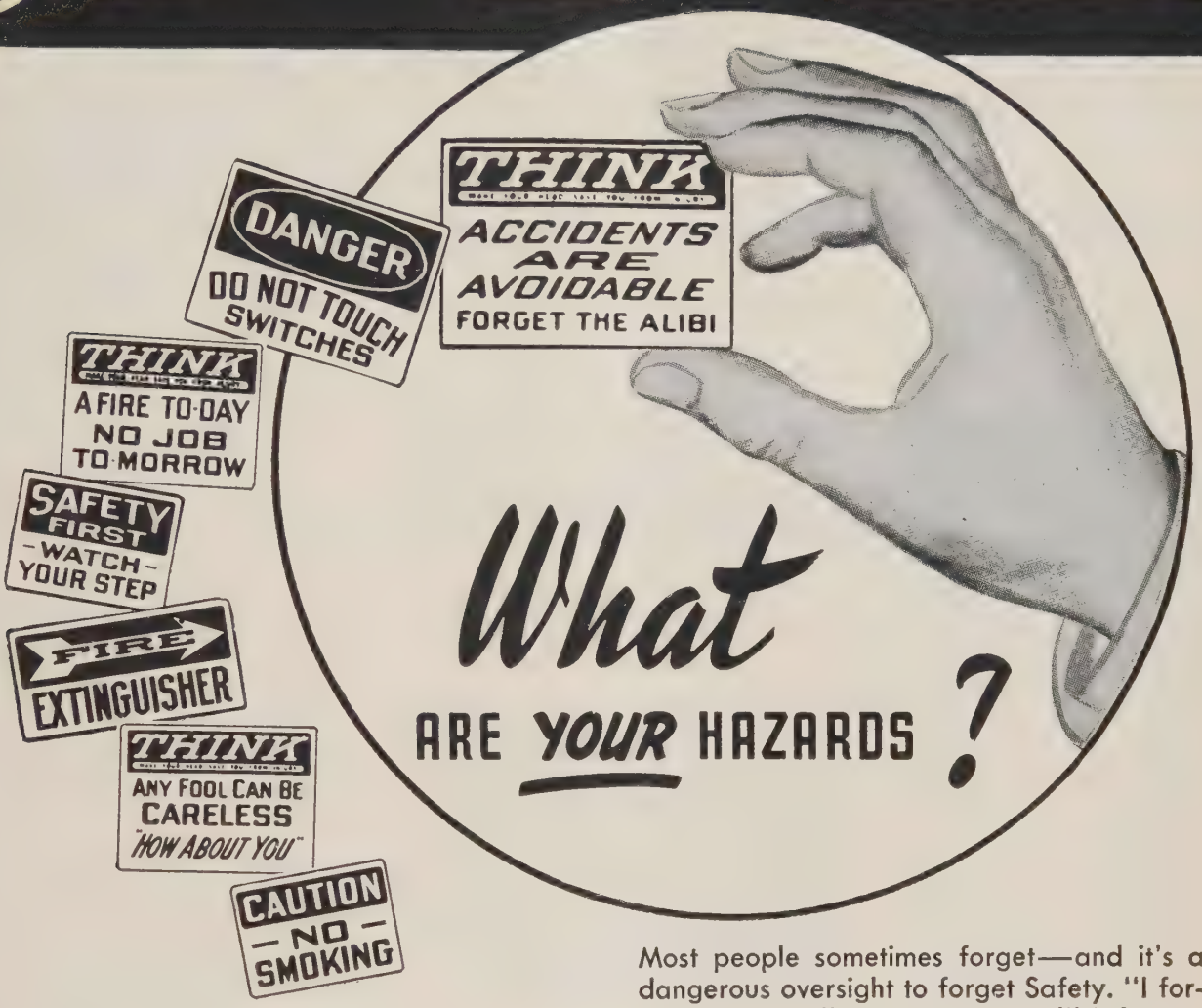
EASY IDENTIFICATION of safety equipment eliminates much of the confusion that results when unexpected hazards pop up in industrial operations. No one has time to stop and figure out where the equipment is . . . indeed, they probably don't even have time to look very far. The stored equipment must be instantly identifiable.

To put the correct safety unit in the hands of emergency workers in a matter of minutes, Monsanto Chemical Company uses large block lettering on chests containing special equipment. Here an employee has just removed a self-contained breathing apparatus from a plainly labelled storage unit. Chest also holds 3 spare cannisters.

Picture by courtesy of Mine Safety Appliances Co.

Stonehouse SIGNS

FOR INDUSTRIAL ACCIDENT PREVENTION



Most people sometimes forget—and it's a dangerous oversight to forget Safety. "I forgot" is an all too common alibi for an accident.

STONEHOUSE SIGNS

To help workers *remember*, post Stonehouse Safety Slogans and Reminders signs. Just the few words on any of them help to promote safety.

The tendency to forget should not be overlooked—it's serious. Teach your workers to cultivate the practice of safety by reminding them to *remember* its blessings.

Have you our Catalog? 64 pages, in full color. It's free on request.

Stonehouse

SIGNS, inc. MANUFACTURERS • Stonehouse Bldg., 9th at Larimer

Denver 4, Colorado

"Signs Since 1863"

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For details, use Key # D-13 on card on page 85)

Best Safety Year

FEWER PERSONS were killed in the course of their employment during 1954 than in any of the 18 years for which records are available, Secretary of Labor James P. Mitchell has announced. Bureau of Labor Statistics estimates placed the work-death total for 1954 at 14,000, a drop of 7 percent from the 15,000 workers killed in 1953.

The total of all disabling work-injuries also dropped sharply, down to 1,860,000—9 percent below 1953 and the lowest total in 15 years.

"In large measure," the Secretary commented, "these reductions in the volume of work injuries reflect advances in safety achieved through the cooperative efforts of employers and their employees. All participants in the safety movement shared in this favorable accomplishment."

The Secretary pointed out, however, that not all of the reduced volume of injuries in 1954 can be attributed to advances in safety. "An appreciable part of this reduction from 1953 to 1954 can be traced to declines in employment and shortened working hours. These contributing factors, however, do not detract from the commendation rightfully due to the safety movement for its 1954 achievements.

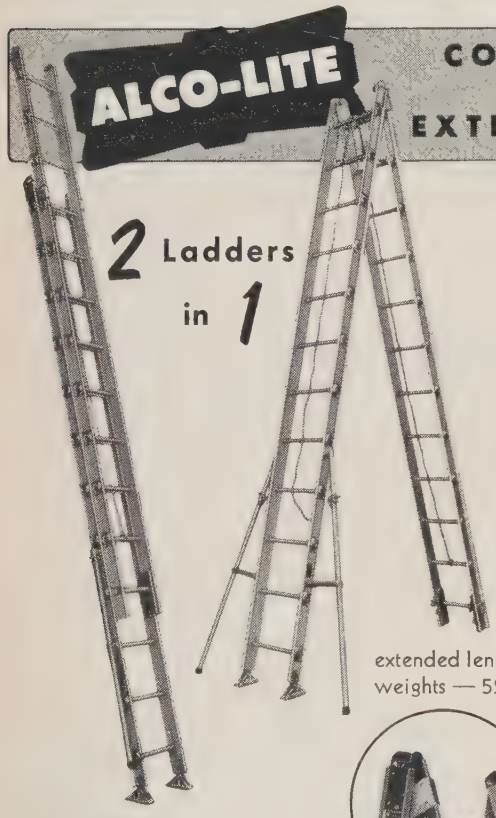
"Despite these encouraging improvements, the 1954 record still presents a serious humanitarian and economic challenge—14,000 workers died from work injuries during the year; 76,000 experienced some degree of permanent physical impairment; and 1,770,000 suffered injuries which incapacitated each of them for a full day or more. No accurate estimate of the total losses resulting from these injuries is possible. The injured workers, however, amassed a total of about 38,000,000 man-days of disability during 1954. Continuing disabilities from these same injuries in future years will ultimately raise this total to approximately 190,000,000 man-days. Our sense of achievement must be tempered by the realization that accident prevention has still a long way to go.

"Although the degree of improvement varied widely in different areas of employment, it is encouraging to note that there was some reduction in injury volume during 1954 in each of the 8 major industry classifications for which estimates were prepared."

In manufacturing the total of 390,000 disabling injuries represented a 19 percent drop from the previous year. In contract construction and in trade, the injury totals dropped 9 percent and 6 percent respectively. Mining continued its previous trend with a 15 percent decline in injuries. In public utility operations injuries were down 5 percent. In transportation employment, the volume of injuries dropped 10 percent. Somewhat smaller reductions occurred in agriculture, and in the finance, service, government, and miscellaneous classifications.

ALCO-LITE aluminum ladders are Safer-Longer!

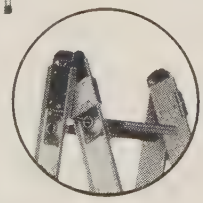
won't rust • rot • splinter • warp • spark or burn!



To change from an extension to an A Ladder—pull the bottom fly section from the butt ladder.

This 2 in 1 ladder incorporates the outstanding advantages of high tensile strength aluminum and exclusive ALCO-LITE construction. It is strong, easy to lift and handle, and will give many years of maintenance-free service. Built for rugged use, the heavy 1" tubular aluminum, corrugated rungs won't turn, twist or break off. ALCO-LITE Ladders more than meet the rigid code and tests of the ASA and Metal Ladders Association.

extended lengths — 21' to 29'
weights — 52 lbs. to 67 lbs.



WILL NOT CLOSE IN USE
An automatic locking device in the top of the ladder prevents the A Ladder from closing in use.

STORES EASILY.
The adjustable, rubber tipped outriggers that stabilize the A Ladder retract into the side rails for easy storage.

Write today for Further Details

OTHER ALCO-LITE PRODUCTS—
Step Ladders
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Dept. A3
Worthington, Pa.

Please send me further information about the CAE and other ALCO-LITE Aluminum Ladders.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

(For details, use Key # D-47 on card on page 85)

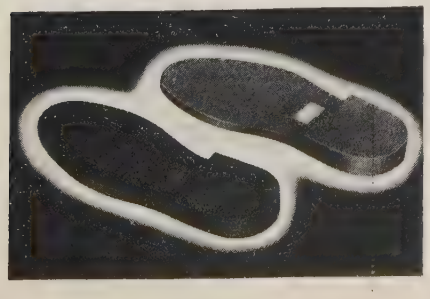
KEEPING UP WITH..

Recent Developments in Foot Protection

FOOT PROTECTION SERIES
other articles in February and March

NEOPRENE CUSHION SOLE

ATTENTION IS being given increasingly to worker comfort in footwear and one of the most recent trends is toward soles that are lighter in weight but still provide long wear and safety. One of the introductions of the Quabaug Rubber Co. is a Neoprene Cellular Cushion Sole that is light enough to float in water and, with its thousands of tiny cells, effectively absorbs shock and cushions the foot. Made from DuPont Neoprene, the material is designed to combat an industrial sole's worst enemies: heat, oil, grease, solvents, many chemicals and abrasion. With a sole that offers all-day foot comfort, general fatigue which becomes a safety hazard to personnel is greatly lessened. The soles are available in brown or black, 18 and 21 iron, with crepe or suede face.



For details, use Key # FP-1 on Inquiry Card on page 85.

FOOT IRON

A NEW SAFETY aid of interest to any trade in which earth is turned by hand is the Atlas Foot Iron, which is designed to protect both the shoe sole and foot of the user against the edge of a spade or shovel. The iron prevents foot injuries and broken shoe shanks, while making it possible to use greater force in digging.

Manufactured by the Atlas Foot Iron Company, the device is made of 12 guage cold rolled steel. It is available in one universal size to fit any shoe.

For details, use Key # FP-2 on Inquiry Card on page 85.

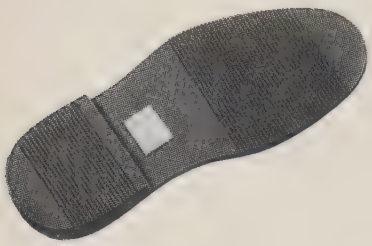
VACUUM-GRIP SAFETY SHOE

THIS ATTRACTIVE dress-weight oxford is designed for safety on the job and styled for after work wear as well. The Thom McAn #4381 features the new Tri-Vac sole, which has only recently been released for civilian use by the U.S. Navy which developed it for heavy-duty use aboard carriers.

The Tri-Vac sole is skid-proof, vacuum-gripping, and said to be superior in use on all types of slippery, wet and oily surfaces. Made of Neoprene, this patented innovation can take it in wear against the action of acids, chemicals, oil, and gas. (For full details about this sole, see the article on page 17 of the July 1954 issue of "Safety Maintenance.")

As designed by Thom McAn, with leather-lined steel toe-box, the model is rugged, good-looking, and extra-safe. This plain-toe blucher is made of sturdy brown leather.

For details, use Key # FP-3 on Inquiry Card on page 85.



SQUEE GEE SOLES

THE NEWEST safety soles offered by the American Biltrite Rubber Company, are the Squee Gee Neoprene Soles. They combine the lightness and comfort of cellular Nuron-Crepe with the oil-proof qualities of DuPont Neoprene. The soles are unusually lightweight and flexible and provide the wearer with sure-footed comfort, due to the special Squee Gee design that provides extra traction on slippery surfaces. Squee Gee Neoprene Soles bear the Saf-T-Cel label and are available in popular colors and thicknesses.

For details, use Key # FP-4 on Inquiry Card on page 85.

LOGGER SHOE

THE PROTECTION of steel toe construction is now available in the new calked logger made by Bone-Dry Shoe Mfg. Co. Especially in the paper and pulp and hardwood industries where the work is with small logs that roll easily, the steel toe can prevent disabling injuries.

The maker claims the steel toe construction is 18 percent stronger, this extra strength being provided by a lip on the bottom of the toe cap which provides a wider foundation, preventing the steel toe from cutting through the shoe if struck or subjected to heavy weight. This shoe is made on an exclusive logger last, providing all day comfort. It is available in 8, 10, 12 and 16 in. heights.

For details, use Key # FP-5 on Inquiry Card on page 85.

CONSTRUCTION & MAINTENANCE WORKERS' NON-SLIP SHOE

THIS RUGGED, laced-to-toe work shoe is a natural for roofers, painters, aircraft workers, construction men, bridge workers and others engaged in high work. Featured in the shoe's design is the Tri-Vac flight deck sole, developed for non-slip safety on aircraft carriers. The oilproof, acidproof and waterproof Neoprene sole has a strongly gripping tread formed in a pattern of concentric circles that act like suction cups for secure footing even on wet or oily surfaces. (For details about the Tri-Vac sole, see the article on page 17 of the July 1954 issue of "Safety Maintenance.")

In addition to the special sole, this work shoe also has a flexible stainless-steel midsole plate that gives protection against foot injuries from puncturing by nails, spikes, etc. Made by the Charles Chester Shoe Co., this high model also features an arch-supporting air cushioned insole from toe to heel and nylon sole stitching.

For details, use Key # FP-6 on Inquiry Card on page 85.

IMPROVED FOOT GUARD

A NEW HEAVY-TREAD, anti-skid full sole and a new rubber strap fastening device are features of the "Sankey" Improved Foot Guard made by Ellwood Safety Appliance Co. The foot guard consists essentially of a metal shield to be worn over the shoe whenever the foot is in danger of being crushed or cut. It is designed to protect the entire front of the foot and instep against hazards from falling, rolling or flying objects, or from accidental tool blows.

The new rubber strap, which replaces the leather strap and coiled spring fasteners, applies tension through its entire length for more secure holding. The new rubber sole has a much deeper, heavier tread molded of first-run tire rubber. It offers better protection against slipping and provides longer wear.

For details, use Key # FP-7 on Inquiry Card on page 85.

INSULATED SAFETY SHOE

FOR OUTDOOR WORKERS in cold climates, refrigeration workers and others subjected to wetness and cold temperatures, the Record Industrial Co. is marketing a new insulated safety-toe shoe. The outside of the

shoe is weatherproof leather which is followed by a layer of Firestone Foamex as insulation. The shoe is lined with a soft, comfortable glove leather.

Built-in steel toes protect the foot from accidental injury, while Neocord soles and heels provide long wear and non-slip features. The "Thermo Shu" is designed for maximum safety and comfort in keeping the feet warm and dry.

For details, use Key # FP-8 on Inquiry Card on page 85.

TWO-WAY GROOVED SOLE

A NEW DESIGN in light-weight, long wearing Neoprene-Nitrocrepe is the "Safetred" made by the Bearfoot Sole Co., Inc. This new design has grooves running both the length and width of the sole to provide two-way slip-resistance. The material resists deterioration by oils and chemicals and provides maximum foot ease on safety and work shoes. Eye-appeal has also been taken into consideration to meet the requirements of today's style-conscious safety shoe wearers.

For details, use Key # FP-9 on Inquiry Card on page 85.

RUGGED SAFETY BOOT

A SAFETY BOOT has been specially developed to give more "pole-side" and sole protection to linemen, log-

(Continued on page 38)

What a big difference in *comfort* the HINGED BRIDGE makes!

Your workers will say they never had comfort like they get in the new Willson Contour-Spec—and its new hinged bridge adds an extra measure of protection, too!

It's the *hinge* that permits equal pressure at every point of contact with the face . . . snug comfort regardless of facial contour! And it's the hinged bridge that means extra safety because there are no dangerous gaps around the eyes.

Contour-Specs conform to *any* face—heavy, lean, round, long or bony! Result is, a new concept of comfort combined with protection that encourages workers to wear them willingly.

Let them try Contour-Specs—see how well the 47-mm. lenses suit every eye size—feel how easily the lightweight, snug-fitting Butyrate plastic frame "sits" without pressure anywhere. Order a supply from your Willson distributor now.

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Leaders in Research and Development of Safety Equipment Since 1870

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(For details, use Key # D-17 on card on page 85)

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NOTICE THESE DOORS MUST BE KEPT CLOSED
BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
HELP KEEP THIS PLACE CLEAN
THINK ACCIDENTS ARE AVOIDABLE FORGET THE ALIBI.
EXIT
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WARNING CURRENT —ON—
CAUTION KEEP AISLES CLEAR

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More than 5,750 different Standard Signs in stock.

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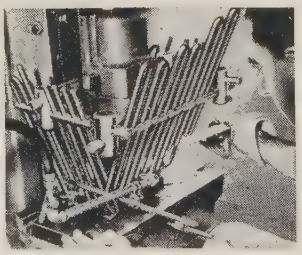

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End Zone Barrier Guard • Enclosure Guard for Milling Machines • Non-Repeat Mechanism

SEARJEANT METAL PRODUCTS, INC. No. 12 Pittsford Rd., Mendon, N.Y.

(For details, use Key # D-19 on card on page 85)

gers and miners. A double thickness of leather completely encircles the foot. A new, long counter is of one-piece, molded sole leather to give added protection to the arch. A specially designed steel shank and the steel box toe give the wearer the finest tempered steel foot protection. The "Hy-Climber" book also features logger-type heel, thicker sole, waterproof leather, and Dacron stitching throughout. Made by Hy-Test Safety Shoes, Division International Shoe Company.

For details, use Key # FP-10 on Inquiry Card on page 85.

SAFETY OXFORD

A NEW BROWN safety oxford that is both dressy and built for rugged wear is announced by the Iron Age Division of H. Childs & Co., Inc. Its light weight, combined with the long wearing qualities of Seiberling Rubber Company's Oil Pruf sole, recommend it for all industries where oxfords can be safely worn. Other features of the "620" include sweat resistant innersole, storm welt, dacron stitching and leather toe liner.

For details, use Key # FP-11 on Inquiry Card on page 85.

Test Program for Air Force Safety

A COMMUNITY of 43,000 people plus their dependents, 34,000 autos and 1,700 aircraft spell accident potential. And when this com-

munity is engaged in a flying industry—aerial combat training—the dangers increase.

For this reason the Crew Training Air Force at Randolph AFB, Texas established a new Directorate of Safety. It merges ground safety, which was under the deputy chief of staff for Personnel, and flying safety, to form a new staff section. The new directorate also becomes a part of the wing organization directly under the commander at each of CrewTAF's nine combat crew training bases.

Single Agency

The consolidation into a single staff agency was first considered after witnessing notable reductions in aircraft accidents when flying safety was made a permanent part of the commander's special staff at CrewTAF Headquarters. Aim of the newly created staff section will be to curb both flying and ground accidents and bring about an equally noticeable reduction of ground accidents.

The new office will be given a one-year trial period. Studies will determine the program's effectiveness and the possibility of adopting it throughout the 42-base Air Training Command, of which CrewTAF is a part.

Industrial Hazards

The usual hazards of industry are present in the thousands of square feet of shop space on the nine bases. Machinery and tools for the upkeep of equipment—today's fastest jets down to lawnmowers—offer the potential of mangled hands, mashed feet, or worse. Most of the aircraft are used for student training and consequently fly many more hours than aircraft not in a training capacity.

Major Gen. Charles F. Born has named Col. Sam C. Gurney to head the new directorate at CrewTAF Headquarters. Under Col. Gurney will be two divisions, flying safety, headed by Major James W. Bradford, and ground safety, directed by Mr. H. E. Packard.

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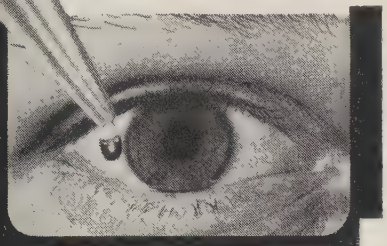
(For details, use key # D-20 on card on page 85)

neutralize

Instantly neutralizes acids or alkalies!



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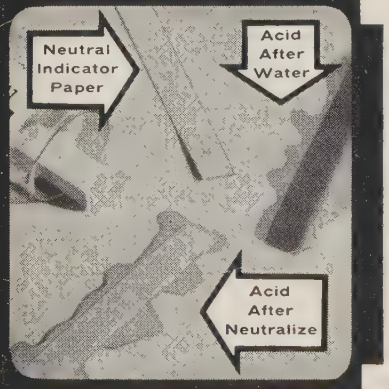

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BULLARD

(Use Key # D-21 on Inquiry Card on page 85)

"What's the Law?"

Edited by
HENRY M. GROSMAN
Counsellor at Law, Newark, N. J.

Master Superior Court, New Jersey
Member
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10, Newark, N. J.

• • •

Disability Retirement Bars Compensation

CLAIMANT HAD BEEN employed by the City as a fireman but was forced to retire as a result of an injury arising out of his employment.

The claimant was denied compensation on the grounds that the statute specifies that no former City employee who has been retired on pension by reason of injury or disability shall be entitled to compensation for such injury or disability.

The Court in affirming the denial of compensation said: "Test is whether he was or was not receiving pension benefits at the time he was to receive compensation benefits and not whether he is forced to retire or does it voluntarily."

Under this case the claimant was receiving retirement benefits before the compensation matter proceeded to an award and therefore under the Workmen's Compensation Statute the retirement benefits barred any compensation benefits.

FLYNN vs. CITY OF UNION CITY, New Jersey Superior Court, Appellate Division. Decided October 15, 1954, 32 N. J. Super. 518.

New Insurance Carrier Not Liable For Aggravation of Previous Injury

THE CLAIMANT had suffered a prior compensable injury to his shoulder. At a later date he aggravated this condition, and was covered by the same insurance carrier as on the original risk.

In the present case, the claimant had, at a still later date, again aggravated his prior injury while shoveling coal in the course of his employment. Before this latest injury, however, the employer had changed insurance carriers.

In reversing the Workmen's Compensation Board's finding that the new carrier was liable for the amount of the award, the Court pointed out that there was nothing in the record that showed shoveling coal to be an unusual exertion or that an accident had been caused by the labor of shoveling coal.

The Court concluded that the injury was aggravation of a pre-existing physical condition incurred in the course of usual work and, therefore, the insurance carrier on the risk when the first accident and subsequent aggravation occurred should be responsible for the award.

MEYER vs. A. HOLLANDER & SONS, INC. New York Supreme Court, Appellate Division, Third Dept., Decided December 28th, 1954.

False Representation in Application for Employment

THE CLAIMANT sustained a serious back injury, which arose out of his present employment. Prior to this employment, the claimant had suffered a back injury which he had concealed from his present employer by answering "none" to the question on his application concerning previous injuries.

The insurance carrier argued that the fraudulent representation operated as a bar to recovery under the Workmen's Compensation Act.

In deciding the case, which was one of first impression, the Texas court held that when the assured

contracted with the insurance carrier to insure its employees, the carrier became liable for all sums of money which might become due to any employee under the terms and provisions of the Workmen's Compensation Act.

The Act does not provide that before a person becomes an employee he must truthfully answer all and any questions which may be asked him by his prospective employer. Nor does it provide that incorrect answers shall void the insurance coverage.

The right to workman's compensation is statutory and cannot be abridged by private agreements or special applications for employment. *PETROLEUM CASUALTY COMPANY vs. SMITH—Texas Court of Civil Appeals —November 17, 1954—274 S.W. 2D. 150.*

Screening Workers for Mechanical Factory Jobs

FOUR OUT OF every ten workers in the United States today are employed in mechanical or factory jobs—about 25 million personnel, of which one out of every four is a woman, reports Industrial Psychology, Inc., national psychological research organization. "This large concentration of mechanical personnel, plus their product contribution to the profit-loss structure of the company, make proper selection methods a first personnel step in this job family."

In the mechanical-factory job family, there are six job categories, as indicated by psychological standards: unskilled worker, semi-skilled worker, factory machine operator, vehicle operator, inspector, and skilled worker.

The Unskilled Worker job area embraces jobs on the lower mechanical level. Assignments are of a minor, simple, routine, repetitive and detail nature, requiring no decision-making of any type. Such job duties are found as moving materials, loading, unloading, shoveling, cleaning, and other gross manipulation operations. Three psychological aptitudes show up as important —eye-hand coordination (controlled brawn), perception of objects, and some tool-mechanical comprehension. Workers who qualify for higher level mechanical jobs (and are thus overqualified for unskilled worker) are poor risks, if kept in the unskilled job area too long.

The Semi-Skilled Worker was a creation of the industrial revolution. He is usually a worker without special training, but has an "industrial literacy" with various types of tools and mechanical processes. His job assignments are fairly detail, routine and repetitive, such as assembly work, production line operations, etc. Psychological aptitudes found important for the semi-skilled worker are eye-hand coordination, tool comprehension, object perception, and space relations—three of these aptitudes are the same as required for the unskilled worker, but

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The Acknowledged Leader in the Lens Cleaning Field
The WILKINS Co., Inc.
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(For details, use Key # D-22 on card on page 85)

the semi-skilled worker must meet higher standards.

The third mechanical job area, Factory Machine Operator, is related to the semi-skilled worker. The psychological difference between the two areas is that the semi-skilled worker does work of a gross manipulation nature, as contrasted to the factory machine operator who does work of a precise coordination nature (either by machine or by hand). The factory machine operator thus needs a good deal of eye-hand coordination and manipulation aptitude. His job is also related to the skilled worker area, in that close tolerances are followed, but differs from the skilled worker in that mechanical judgment is not involved. Typical factory machine operator job titles are cutter, press operator, grinder, lathe operator, finisher, watch or television assembler, welder.

The Vehicle Operator area embraces jobs involving the operation of a moving vehicle. His job duties are fairly detail and repetitive, but require a good deal of eye-hand coordination, perception aptitude, and particularly visualization of objects in their space relations.

Inspectors

The Inspector job is highly visual in nature, thus differing from other mechanical classifications. All the mechanical areas require object perception and space visualization aptitudes to some extent, but the inspector job is saturated in these, with coordination a minor trait. Inspector jobs range all the way from job duties which require mainly visual inspection of objects, to the inspector who accepts, rejects, or returns the product for re-work on the basis of standards involving his judgment or interpretation.

The Inspector job as described psychologically covers the visual type of inspection; workers at higher inspection levels may be in quality control, and classified as skilled workers or in the technical job family.

The sixth mechanical job area, and the highest mechanical classification (psychologically and otherwise), is the Skilled Worker. These are the men who make the machines, the patterns, models, working samples, tools, dies, templates, jigs; and who keep things running. The skilled worker's job duties are mechanically complex and difficult; and not routine or repetitive. They involve the planning and performance of tasks that require skillful use of tools and equipment, and an understanding of how machines and tools operate. Psychologically, the skilled worker needs good mechanical-tool comprehension, the other mechanical aptitudes described above but at a higher level, and paperwork aptitudes.

For scientific selection of mechanical personnel, the following psychological screens, all administered and interpreted in the company, are available:

(1) Weighted application blank

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CHARCO NEO SOL®

ALL NEOPRENE GLOVES

These two new all-neoprene top quality gloves offer a real bonus in job efficiency and economy, through extra long life and superior protection. One is solid black for general use; the other truly white for food processing and sanitary purposes. Both have red inner lining and red roll at the cuff; and both have plus qualities in hand comfort, flexibility and touch sensitivity.

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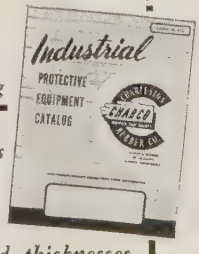

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(For details, use Key # D-23 on card on page 85)

—short, followed by the screening interview (10 minutes);

(2) Appropriate aptitude job-tests, available for each of the six mechanical job areas, or a composite package for the mechanical family (15 to 35 minutes);

(3) Personality tests, either a test of general stability, or of extrovert-introvert personality, or both (5 minutes per test);

(4) Weighted application blank —long, followed by placement interview in which all the data above are brought together and hiring decision is made (15 minutes for application, and 20 minutes for interview).

Further information on the scientific screening and selection of mechanical-factory personnel, in terms of the psychological tests to use and how to install them, may be obtained from Industrial Psychology, Inc., Research Center, Tucson 6, Arizona.

ASME Committee for Nuclear Engineering

THE AMERICAN Society of Mechanical Engineers has established a Nuclear Engineering Committee to co-ordinate the society's activities in "those areas of mechanical engineering in which a knowledge of nuclear physics is essential." Among these areas are core design, shielding, waste handling, fuels and fuel fabrication, radiation effect (with special emphasis on metals and safety), special equipment, and operation of nuclear power plants.

Chairman of the new committee is Albert C. Pasini, assistant general superintendent of production, The Detroit Edison Company. The new committee will serve to co-ordinate a number of activities connected with nuclear engineering which are now carried out by various divisions of the society, primarily those devoted to fuels, heat transfer, instruments and regulators, metals engineering, power, and safety.

Mr. Pasini pointed out that increasing declassification of documents, made possible under the new Atomic Energy Act, will make the work of the committee more practical than it would have been in the past. Primary assignments of the committee will be to plan for participation of ASME in a Nuclear Engineering Conference to be held under the auspices of Engineers Joint Council in the summer of 1955, and to study the society's long-range needs in the field of nuclear engineering and recommend a method of organization within the society.

It was emphasized that the Nuclear Engineering Committee is separate and distinct from ASME's Nuclear Energy Application Committee. The latter is a policy group. The former, under the normal procedures of ASME, could lead to the formation of an organization of professional division status.

Simpkins suffered from heat fatigue—and his work was extremely poor.

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You can hold down accidents caused by heat fatigue

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Meet Mr. Higby...

and the GREMLIN with a conscience

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Maybe you've never met a Gremlin, head-on.

Even so you'll want to chuckle your way through "Mr. Higby and the Gremlin". It's our *brand new* 16-page booklet, loaded with important facts about *your* floors and their upkeep. It is colorfully illustrated, entertainingly written.

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(Use Key # D-12 on Inquiry Card on page 85)

THE Future SHOWS

New York, N. Y. *April 11–15*

Twenty-fifth Annual Greater New York Safety & Exposition (Hotel Statler). Harold C. Mesch, general chairman, Greater New York Safety Council, Inc., 60 E. 42nd St., New York 17, N. Y.

Niagara Falls, N. Y. *April 19–21*

Fifteenth Annual Western New York Safety Conference, in cooperation with the American Society of Safety Engineers (Niagara Hotel). Patsy E. Gismondi, Executive Secretary, 1436 Delaware Ave., Buffalo 9, N. Y.

Cleveland, Ohio *April 26–28*

Twenty-fifth Annual All Ohio Safety Congress & Exhibit (Hotels Cleveland and Hollenden). A. W. Moon, Congress Manager, Industrial Commission of Ohio, Safety & Hygiene Div., Columbus 15, Ohio.

Grand Rapids, Mich. *April 26–28*

Twenty-fifth Annual Michigan Safety Conference (Pantlind Hotel and Civic Auditorium). R. H. Goring, Executive Secretary, Michigan Bell Telephone Co., Detroit, Mich.

Chicago, Ill. *May 1–3*

Greater Chicago Safety Conference & Exposition (Sherman Hotel). Greater Chicago Safety Council, 10 N. Clark St., Chicago 2, Ill.

Easton, Allentown, Bethlehem, Pa. *May 2–4*

Twenty-eighth Annual Eastern Pennsylvania Safety Conference (May 2, Hotel Easton; May 3, Hotel Americus and Hotel Traylor; May 4, Lehigh University). H. A. Seward, secretary, Lehigh Valley Safety Council, 602 E. 3rd St., Bethlehem, Pa.

Winston-Salem, N. C. *May 18–20*

Twenty-fifth Annual North Carolina Statewide Industrial Safety Conference (Robert E. Lee Hotel). H. S. Baucom, Safety Director, North Carolina Industrial Commission, Raleigh, N. C.

Duluth, Minn. *May 19–20*

Thirty-first Annual Conference, Lake Superior Mines Safety Council (Hotel Duluth). John Anderson, secretary, 18 Federal Building, Duluth 2, Minn.

Syracuse, N. Y. *May 16–18*

Central New York Safety Conference & Exposition (Hotel Syracuse & Hotel Onondaga). Walter L. Fox, Manager, Safety Division, Syracuse Chamber of Commerce, 351 S. Warren St., Syracuse 2, N. Y.

Chicago, Ill. *May 16–20*

Eighth National Materials Handling Exposition & Conference (International Amphitheatre). Clapp & Poliak, Inc., exposition management, 341 Madison Ave., New York 17, N. Y.

Richmond, Va. *June 2–4*

Twenty-first Annual Meeting Virginia Safety Association (Jefferson Hotel). William M. Myers, executive secretary, Virginia Safety Association, Room 302, 1103 E. Main St., Richmond 19, Va.

Hartford, Conn. *June 7–8*

Tenth Annual Connecticut Safety Society Conference (Statler Hotel). William G. Willse, Manager, National of Hartford Group, 1000 Asylum Ave., Hartford 15, Conn.

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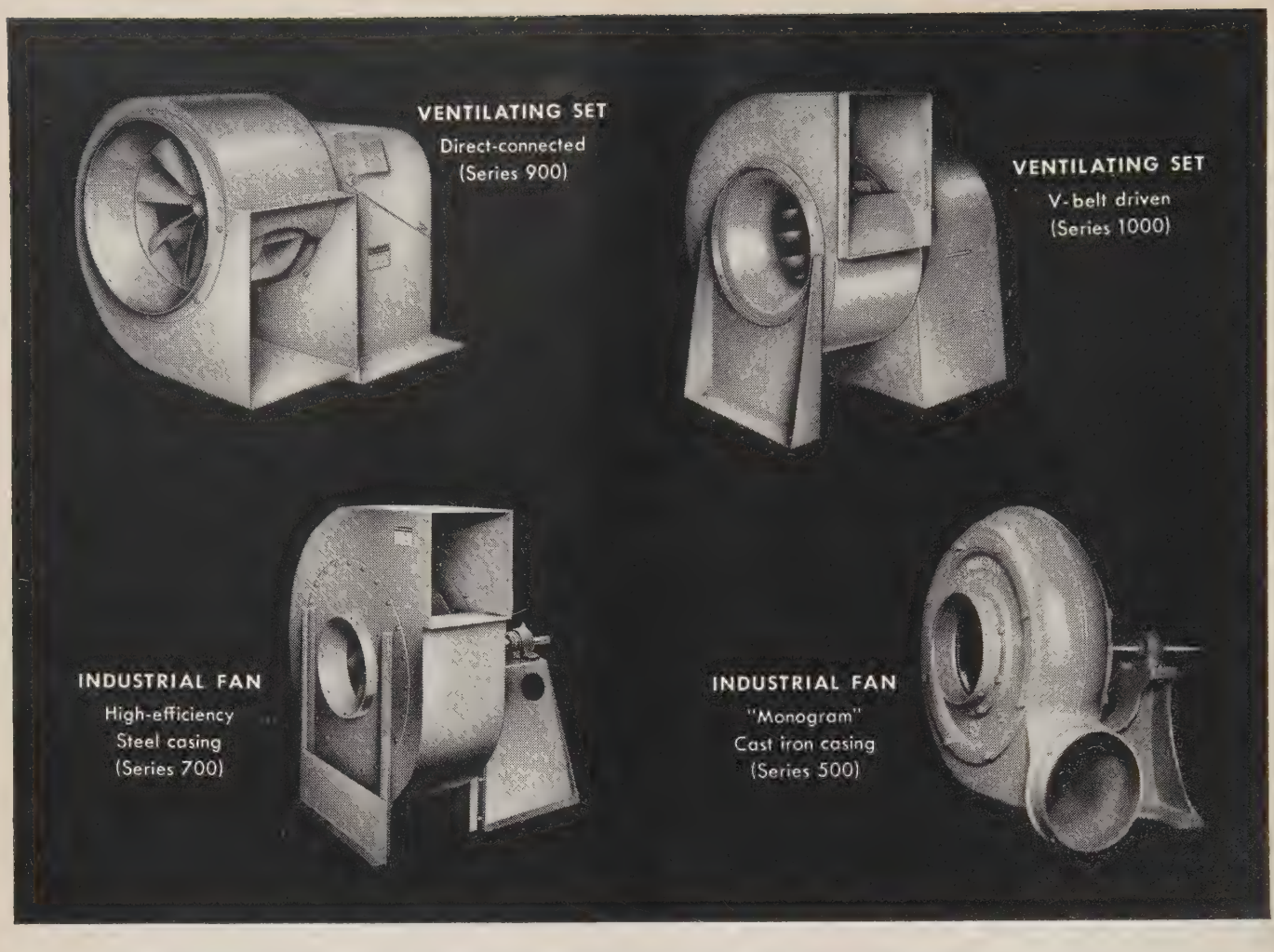

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Whatever your air handling problem . . . smoke, fumes, vapor, dust, wood shavings, granular material or ventilating . . . these Westinghouse fans are designed to handle or remove them . . . efficiently and economically.

INDUSTRIAL FANS (SERIES 700) . . . for dust collecting and conveying at high pressure. Wide range of capacities. Three types of wheels in 11 sizes.

1. Air Handling Wheel . . . particularly adaptable for general air handling and exhaust systems in removal of smoke, fumes and gases.

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3. Long Shaving Wheel . . . handles long fibrous materials that pass through the fan itself: trimmings from corrugated boxes, alfalfa, long shavings from woodworking machinery, rags, others.

INDUSTRIAL FANS (SERIES 500—MONOGRAM) . . . ruggedly built, with cast iron casing. For use as a blower or exhaust or for dust control, collecting and conveying waste or raw materials, supplying air for furnace blast, drying, etc. Provides long, trouble-free service at low cost under severest operating conditions. In 10 sizes with wide range of capacity.

SERIES 900 VENTILATING SETS . . . compact, efficient, direct-connected and ready-to-run. Especially suited for small ventilating installations. Cleanable radial blade wheel design minimizes problem of handling airborne dirt and grease. Six sizes from 6" to 15" wheel diameters.

SERIES 1000 VENTILATING SETS . . . V-belt driven, self-contained. Install indoors or outdoors in a wide variety of heating, ventilating or air conditioning applications. Twelve sizes from 9" to 30" wheel diameters.

These rugged, powerful Westinghouse fans provide the most economical solution to your specific air handling problem. And Westinghouse fans offer a *single equipment warranty* with undivided responsibility . . . an *exclusive* Westinghouse-Sturtevant feature. Get the facts today on the fan built for *your* need from your nearest Westinghouse-Sturtevant office. Or write: Westinghouse Electric Corporation, Sturtevant Division, Hyde Park, Boston 36, Mass.

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Industrial Hygiene

Industrial Hygiene Laboratory

AN INDUSTRIAL HYGIENE laboratory and expanded office facilities for the New York State Labor Department's in-plant health protection activities in western New York have been established at 252 Niagara Street, Buffalo, it has been announced by First Deputy Industrial Commissioner Charles W. Halloran.

Establishment of the new laboratory will not only provide quicker and improved industrial hygiene service for the chemical, foundry, metal finishing and other industries concentrated in that area, but also will reduce staff travel from New York. It has a fully equipped chemical laboratory for the analysis of possibly hazardous materials and air-borne contaminants; for dust sampling and counting, biochemical studies, industrial noise determinations and analyses, and complete evaluations of industrial exhaust systems. In addition, the headquarters offices will provide a convenient base of operations for the Department's physicists and other experts handling problems of health and safety which stem from increased use by industry of isotopes and other forms of radioactive energy.

Industrial Health Conference

METHODS OF SAFEGUARDING workers' health will be the primary subject for discussion at the forthcoming meeting of the American Industrial Hygiene Association in Buffalo April 25–28. More than 60 papers will be presented, together with panel discussions, committee meetings and joint meetings with other organizations active in the field of industrial health.

This meeting of the American Industrial Hygiene Association will be concurrent with meetings of the American Conference of Governmental Industrial Hygienists, American Association of Industrial Nurses, Industrial Medical Association, and the American Association of Industrial Dentists. Based on past experience, attendance of the 1955 Industrial Health Conference will number in the thousands.

Experts in the various fields will discuss health aspects of new materials of commercial importance, laboratory experiments, air pollution, and radiation. Workers from industry, governmental agencies, and universities will participate in the exchange of new information and ideas.

Exhibits and demonstrations will be arranged by companies producing equipment useful in the field of industrial hygiene and toxicology.

Lead Absorption Control

LOSS OF INDUSTRIAL working time due to lead exposure can be virtually eliminated, Dr. Gilbert B. Meyers, medical supervisor of the Philadelphia plants of The Electric Storage Battery Company, told the American Academy of Occupational Medicine.

The battery manufacturer's lead absorption control program has been in operation for two years. Dr. Meyers said the preventive program has been so effective that "we have had to restrict only five out of 1,379 workers from lead exposure jobs. All except one were able to continue working. All quickly recovered clinically."

Regular urine tests for lead absorption which facilitate early diagnosis, "are the backbone" of the medical part of the program, according to Dr. Meyers. All workers exposed to lead are tested every four to eight weeks. If hazardous absorption is found, the worker gets a urine test every two to four weeks. If lead absorption approaches the dangerous level, the worker is given blood tests and complete physical examinations at one-to-four-

(Continued on page 59)

By A. P. G. PETERSON
and C. E. WORTHEN
General Radio Company
Cambridge, Massachusetts

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NOISE CONTROL SERIES
next article in May

SIMPLE NOISE MEASURE

for a quick look...

As the seriousness of the noise problem presses more forcefully on industrial management, those charged with carrying out industrial hygiene programs often face a bewildering situation. The complications of the situation are twofold: first, there are no absolute criteria for deafness risk; and second, although a means of locating and evaluating noise hazards is necessary, the selection and operation of instruments is not always easy for people unfamiliar with acoustical problems. Fortunately, it is possible to solve some problems with relatively simple equipment. Furthermore, the use of simple measuring equipment can lead to a better understanding of acoustical problems, and familiarity with the simple equipment makes the more complicated measuring equipment easier to use—in brief, a chain reaction of knowledge.

There are other industrial noise hazards besides hearing damage that should not be overlooked. Verbal communication between individuals is usually necessary in any plant. Plant safety is seriously cut down when noise levels are high enough for instructions to be misunderstood or for shouted warnings to go unheard. In such situations, noise-level measurements with simple equipment can be very useful as correction guides.

Figure 1. In picture above man measures noise from rotating electrical machinery with sound survey meter for overall level.

The Nature and Effects of Noise

The absence of absolute criteria for hearing damage stems directly from the complex nature of noise and of its physiological and psychological effects on man. Absolute criteria have been the subject of investigation and study for many years, and studies are still continuing. Tentative conclusions have been reached and published. The use of those results that are at present available is justified only in the light of their recognized limitations and under specified conditions. This subject is clearly beyond the scope of an article on measurement, and the reader is referred to existing publications [1, 2] for further details.

which shows this . . .

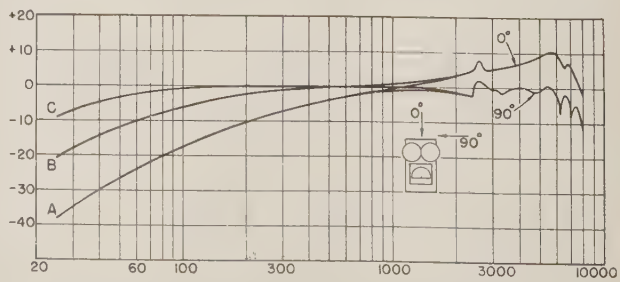

Figure 2. Frequency response curves of survey meter show 90° normal curve and important 0° curve for high-frequency distinction.

ng Attack on oise Problem: MENT SURVEY

These same considerations, the nature of noise and its effects, also have a direct bearing on measurement methods and measuring equipment, and a brief discussion of them helps understand the purpose and capabilities of measuring equipment. First, noises are generally complex. The energy in a noise is not usually concentrated at a single frequency, or pitch, as it is in a pure tone; but rather the energy is distributed over much of the audible range. This distribution varies for different sources. For example, the powerful hiss of a steam hose used for cleaning has considerable energy over the whole audible range, and it has more energy at the high-frequency end of the audible range than at the low-frequency end. In contrast, the noise produced by an automobile is mostly at the low frequencies, but it too has some energy over the whole range. There are many devices that have such characteristics, and there are many others, such as chipping hammers, pneumatic wrenches, and calculating machines that have the greater part of their noise energy near the middle of the audible range.

The second part of the problem concerns the fact that the psychological and physiological effect of a given amount of noise energy depends on how it is distributed in frequency. Thus, if a certain amount of noise energy is concentrated at low frequencies, it is probably less damaging to the hearing mechanism than if the same amount of energy is concentrated in the middle frequency range. Similarly, low audible frequencies are usually less annoying than high audible frequencies of the same level.

Related to this aspect of the noise problem is doing something about the noise. That is, when we know where the important noise energy is in level and frequency, we can control the noise more effectively and economically.

There are still other characteristics of a noise that are significant in determining the psychological and physio-

for double check...

Figure 3. The minimum equipment for a complete noise survey, consisting of a sound-level meter and an octave-band analyzer, are shown in the picture above being used to measure the noise level in the vicinity of a braiding machine. Note mike at left.

which also adds this . . .

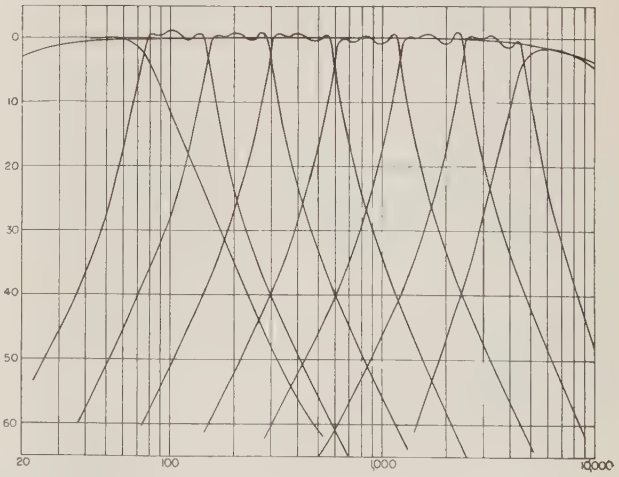

Figure 4. Frequency response curves for the octave-band analyzer. Each curve shows the pass band for a single switch position only. When the switch is set in any one position, the analyzer responds only to noise of those frequencies embraced by the corresponding curve in the graph. This helps discover more dangerous noises.

logical effects. Among these are the duration of the noise, how often it occurs, and the waveform. The waveform is particularly important for impact noise, because it is then desirable to know such things as the peak value of the noise level and how long the noise remains near the peak value in level. But that measurement requires further instrumentation than we shall discuss here.

Can a warning be heard? Figure 5

Noise level is related in this table to distance in feet over which a shouted warning can be heard, a directly important test of immediate danger to area's employees.

Distance in Feet from Noise Sound	A–level
0.5	96
1	90
2	84
3	80
6	74
12	68
24	62

Measuring Equipment

Let us first consider the fairly complete noise-measuring setup.[3] This setup would usually include at least a sound-level meter and an octave-band analyzer, as shown in figure 3. Frequently, other auxiliary equipment, such as magnetic tape recorders, narrow-band analyzers, and cathode-ray oscillographs would also be used; and microphones with particular characteristics for the job at hand might be substituted for the microphone regularly supplied with the meter.

What do these instruments do for us? First, the sound-level meter amplifies the electrical signal from its microphone, which is driven by the sound waves. This amplified signal actuates the indicating meter to show the over-all noise level. This level is important because it is the first significant indication of the seriousness of the noise problem. That is, noises of similar character are more likely to cause hearing damage, to be annoying, or to interfere with verbal instructions, if the over-all levels are high than if they are low.

Second, the sound-level meter provides an amplified electrical signal for use by auxiliary instruments. For noise problems, the first auxiliary instrument to consider is the octave-band analyzer. By its use, one can analyze the signal from the sound-level meter in terms of frequency (or pitch) into eight bands covering the audible range of sounds. This division, as represented in figure 4, is a second important measure of the seriousness of a noise problem, since for a given noise level, low-frequency sounds are usually less important than those of higher audible frequencies.

Measurements of the over-all noise level and the octave-band analysis can be made either by the plant's own hygiene department or by outside consultants. Then, after a study of the levels in comparison with the tentative criteria available,[2, 3] it is possible to decide whether or not a noise hazard exists, and, if necessary, to recommend and to carry out noise reduction measures, or to recommend protective devices.

Should You Buy Measuring Instruments

Most large organizations will find it desirable to own the measuring equipment necessary for carrying out such an attack on a noise problem. Even comparatively small organizations may find that owning a sound-level meter and analyzer is the most economical procedure, because they will have enough noise problems to justify it. For example, in addition to the noise hazard, there is the interference of noise with speech. In some locations in a modern plant, the noise level may be so high that the foreman has difficulty giving verbal instruction to his workmen. This condition reduces efficiency. Sometimes with the aid of sound-measuring equipment, one can tell in quantitative terms how serious the problem is and also what, if anything, can be done about it.

Another practice that is gaining acceptance is the specification of maximum permissible noise levels for new equipment. When a plant considers ordering a hydraulic pump, for example, they would ask, on the request for a quotation, for a specification of the noise-power level in octave bands. The quoted levels would then be one of the specifications that would be used in judging whether one particular model or another should be purchased.

In other words, a more expensive but quieter machine may be a better buy than a noisy one, since the noisy machine may require expensive noise-reduction procedures because of the noise hazard or because of reduced efficiency from noise interference with verbal instructions. A similar situation has been appreciated, for many years, by electric power companies who have had the problem of putting transformer substations in

Simple Maintenance Check . . .

Figure 6. Driven by transistor-type oscillator at left, acoustic-calibrator checks sound-level meter's accuracy with a pure tone.

residential neighborhoods. Noisy transformers mean trouble from complaining neighbors, so quiet transformers are worth a premium. Management is now beginning to realize that noisy equipment may also be expensive in the long run. As this fact becomes more generally appreciated, it will be helpful to have the necessary sound-measuring equipment to tell if machinery meets noise level requirements.

Simple Noise Meter

Since many smaller plants will prefer to begin on acoustic instrumentation with a very simple setup, we shall now discuss the possibilities of the very simple sound-survey meter, shown in Figure 1. Although it is not a substitute for the equipment shown in Figure 3, the small sound-survey meter is designed specifically for use in preliminary surveys, and it is still useful even if detailed measurements prove to be necessary. It is inexpensive, small, easily carried, and easy to use. Because it can be held in one hand, measurements are speedy. With it you can check over-all levels in a whole plant about as fast as you can walk through it.

The sound-survey meter does the job of measuring the over-all level, but it does not provide an output for frequency analysis. It has a microphone, an amplifier, and an indicating meter, so that it can give the first significant measure of a noise, namely, the over-all level. It can then be used for a preliminary survey to see if over-all levels are so high that a complete survey with more refined instruments is necessary. After remedial measures have been taken, periodic repeat measurements with the sound-survey meter will check on changing conditions. Not only are such checks desirable as a precautionary measure, but also to indicate to plant personnel that management hasn't forgotten the problem and is constantly alert to it.

Noise Range Indication

The sound-survey meter can do more than measure the over-all level. It can give some indication as to whether the noise is mainly in the high-frequency range, in the low-frequency range, or widely distributed. Both the sound-level meter and the sound-survey meter are equipped with a control knob that permits different frequency-weighting networks to be selected. These networks alter the response of the meter in the low-frequency range as shown by the frequency response curves of Figure 2. Note that with the control knob in position C, the response is nearly uniform, in position B, the response below 1000 cps is reduced somewhat, and in position A, the response below 1000 cps is reduced greatly. Then, if 3 readings on the same noise are taken with the control knob in the 3 different weighting positions, one can estimate how the noise energy is distributed.

For example, if the 3 readings are all essentially the same, the noise energy is mainly above 1000 cps. If a

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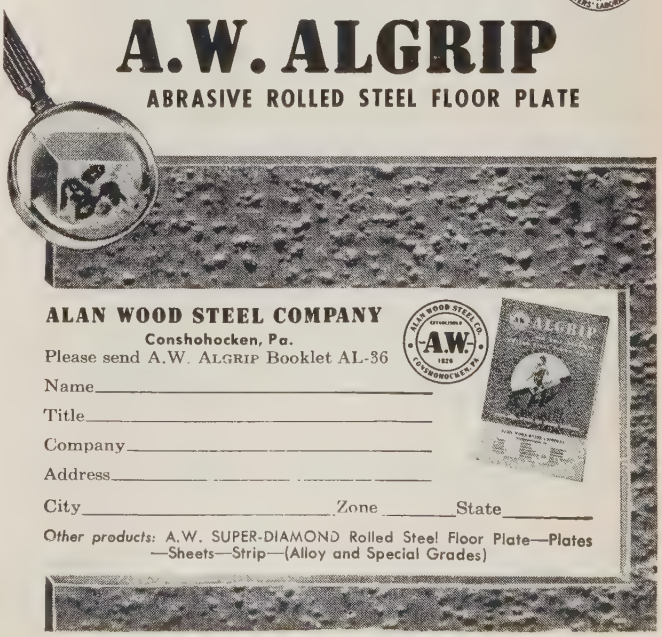

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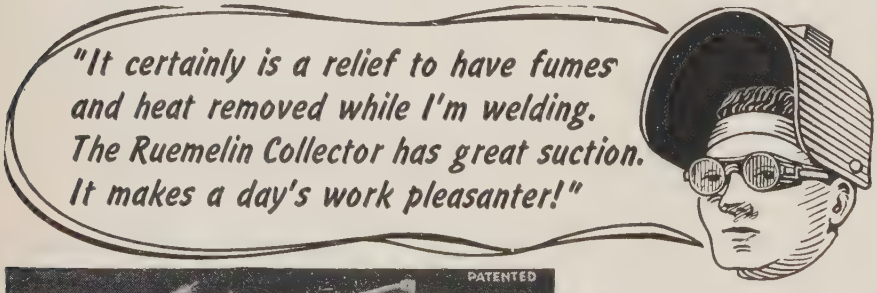
moderate reduction in level reading is obtained in going from the C to the B weighting; and, if a large reduction is obtained in going to the A weighting, the noise is mainly low-frequency noise. For an intermediate condition, the noise is probably distributed around the 1000 cps point, but it may be over the full frequency range of the meter. We have here a means for a qualitative indication of the distribution of noise energy that can guide one in making a decision as to whether a noise is a serious problem or needs further investigation before a final decision is made. It can also assist in doing something about the noise. But, of course, the information provided by a more complete measurement setup is usually more satisfactory for making final decisions.

Examples of Use

A simple illustration of an actual occurrence in a factory will show how the sound-survey meter can bring out important facts about a noise situation. A progressive management had realized for some time that some of its operations were so noisy that the operators might be subject to damaging noise levels. For example, to be on the safe side, they had been requiring that operators of such machines as grinders and chippers should wear ear protectors. But they had not felt that such protection was necessary for nearby workers doing operations that were in themselves quieter. A quick check with the sound-survey meter showed, however, that many of those workers were experiencing just as high noise levels as the workers required to use ear protective devices. Naturally, the logical conclusion was to extend the use of protective devices to all workers in the vicinity of noisy operations.

How Far Does Noise Spread

This illustration brings out another important point that needs checking in industrial noise situations: namely, how far does the noise spread from a noisy machine? At first one might assume that all one needs to do is to walk around with a sound-survey meter and to observe the over-all levels at various distances from the noisy machine. To some extent, this assumption is correct. However, one important effect makes the problem a bit more complicated. This effect results from the fact that high-frequency sounds usually decrease in level with increasing distance faster than do low-frequency sounds. Particularly in acoustically treated rooms, one will find that the low-frequency energy in a noise will extend over a wider area than will the high-frequency energy. If an octave-band analysis of the noise at different distances is available, the effect can be easily observed quantitatively. With the sound-survey meter, one can observe this by noting the readings of the noise level for the 3 different weighting positions. One should find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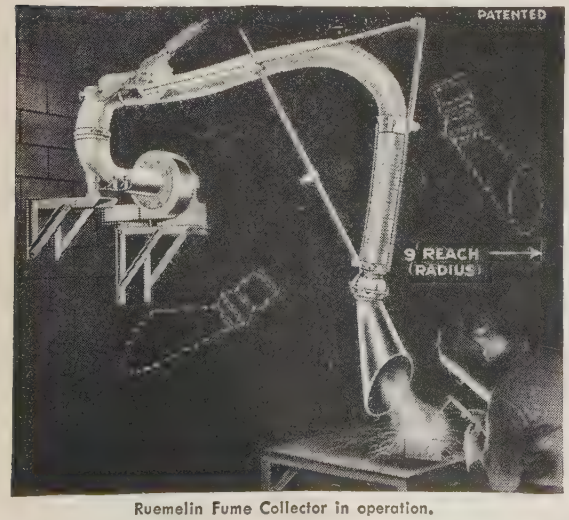

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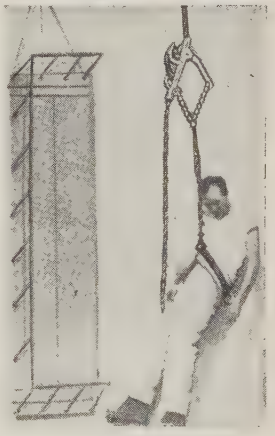

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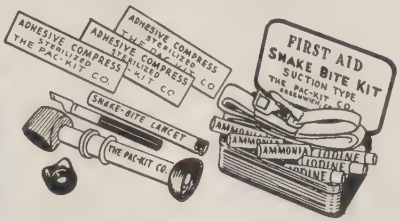

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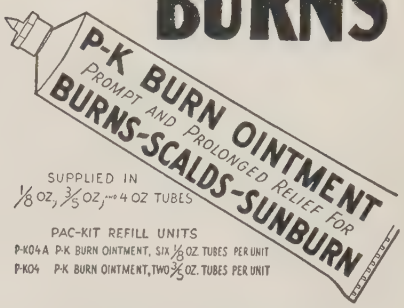
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that at a distance from the source of noise the differences among the 3 readings should be greater than at a point close to the source. If an octave-band analysis is not available, it has sometimes been recommended that the B-reading be generally used to rate the sound in such instances. This type of compromise is useful for making a preliminary decision, but it is usually wise to record the readings with all 3 weighting positions. Such readings will probably be useful as time goes on in judging the changing pattern of the noise in a plant.

The sound-survey meter can also be used to determine the degree to which noise interferes with speech. In order for a shouted warning to be understood, the noise as measured with the A-weighting network should be less than the value shown in the table of Figure 5. These values will vary somewhat depending on conditions, but the table should be useful as a guide for estimating how much an unsatisfactory noise situation must be changed in order to make it satisfactory from the speech-interference viewpoint.

Records

In any noise-measurement program set up, it is very important to develop a systematic procedure for recording the measured data and for maintaining equipment in proper operating condition. The procedures for recording and keeping data on noise measurements can usually be worked out to suit the conditions at a given plant and a number of suggestions for the type of data that should be recorded are available.

Maintaining equipment usually means, at a minimum, regular checking of batteries and replacement when necessary. In general, it is desirable to go beyond this step and take advantage of a simple calibration check system that is available. The method is based on the use of a sound-level calibrator and an electrical oscillator as shown in Figure 6. This combination supplies a pure-tone sound of known level to the microphone. If the sound-level meter or sound-survey meter correctly indicates this sound level, there is good assurance that the instrument is in proper working order.

Pictures by courtesy of General Radio Co.

BIBLIOGRAPHY

[1] *ASA Subcommittee Z24-X-2, "The Relations of Hearing Loss to Noise Exposure," American Standards Association, 70 East 45th Street, New York, 1954.*

[2] *Rosenblith, W. A., and Stevens, K. N., "Handbook of Acoustic Noise Control,"* Noise and Man, *Vol. II, WADC Technical Report 52–204, June, 1953, PB 111,274, Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C.*

[3] *"Handbook of Noise Measurement," published by the General Radio Company, 275 Massachusetts Avenue, Cambridge 39, Massachusetts, Price $1.00.*

Chicago Air Pollution

A TWO-YEAR research program into the sources of Chicago's air pollution problem has been announced by The Midwestern Air Pollution Prevention Association.

Details of the plan were outlined by the association's president, Dr. Haldon A. Leedy, vice president and director of Armour Research Foundation of Illinois Institute of Technology, Chicago.

Once the sources of air contamination are determined, Leedy said, MAPPA intends to conduct a widespread educational program designed to enlist the public's support in controlling air pollution. He pointed out that anti-pollution legislation and smoke abatement devices have been helpful in reducing air pollution, but that no permanent solution is possible without knowledge of the underlying causes of atmospheric pollution.

Leedy said Armour Research Foundation recently completed a $20,000 study for MAPPA which was "a step in the right direction." The investigation included a limited analytical study of Chicago's settled dust, and a partial statistical survey of the city's smoke violation reports. The project provided for study of some of the pollutants in Chicago's atmosphere, but little more than a superficial look at the sources of air pollution, according to Leedy. He estimated that about a half billion pounds of dust fell on Chicago each year. That's about 100 pounds for each inhabitant, or enough to form a 1/64th-inch layer of dust over the entire city.

Contrary to popular belief, Leedy said, the largest contributor to air pollution is the average citizen—not industry. Scientists believe that approximately 45 percent of Chicago's settled dust is wind-generated; another 45 percent is combustion dust, and the remaining 10 percent dust from a variety of industrial operations.

"One of the principal keys to smoke control is complete combustion. A dense black smoke, for example, will contain well over 50 percent unburned fuel. In such cases, more than one-fourth of your fuel is going up the chimney unburned," Leedy explained.

Medicine Alone May Not Conquer Syphilis

MEDICINE HAS ALMOST won the battle against syphilis but medicine alone cannot completely finish the job. What is needed is discovery and treatment of unknown cases and prevention of new infections, physicians report.

A review of more than 250 publications on the disease last year indicates that although "great strides have been made in venereal disease control, complete control is far from being accomplished." The review appeared in the February *Archives of Internal Medicine*, published by the American Medical Association. It was written by Drs. Herman Beerman, Ira L. Schamberg, Leslie Nicholas, Philadelphia; and Lawrence Katzenstein, Wilmington, Delaware; with the help of Drs. T. Guthe and C. J. Hackett, Geneva, Switzerland.

Is Disease Decline "Real"?

They said penicillin, sometimes in only one-shot form, has made treatment of some forms of syphilis easier and more effective. But the review said the sharp decline of reported syphilis since the development of penicillin may not be "real" or lasting.

It has been estimated that some 2,000,000 untreated cases of syphilis are going unnoticed. Reported syphilis may show a decline simply because many cases are not known by health officials. What is worse is that early latent syphilis seems to be slipping undetected into the second, more serious stage.

It's no longer really a medical problem, some physicians feel. Public education and cooperation helped make possible the successful use of new scientific discoveries. Now the "potential and actual" comeback of syphilis suggests "a critical need" for re-education in control and prevention.

Control depends on early diagnosis and treatment. The death rate "for the next few decades will depend largely on the discovery and treatment" of thousands still at large in symptom-free stages. Tracing immediate contacts is not enough. Close relatives of congenital cases must be examined as well as spouses and children of all persons with positive blood tests. Prevention is largely a matter of controlling promiscuity.

Future Outlook

The long-term outlook "does not justify any relaxation of vigilance or abandonment of special efforts against syphilis," the review stated. It suggested that "every public-health-minded citizen" should think about the problem of venereal disease control funds, which may be cut because the problem seems to be in hand. The American Venereal Disease Association, the Association of State and Territorial Health Officers, and the American Social Hygiene Association have urged maintaining a $10,000,000 Federal budget for venereal disease control. They said present allocations are inadequate.

Syphilis is one of the most complicated diseases known to man, the review noted. It can affect children born to infected parents, and can result in blindness, heart disease, and insanity, among other things. While the decline in the reported incidence has been "one of the most dramatic episodes" in modern epidemic control work, the problems of the future are prevention of infection, control of spread, and discovery of untreated cases to prevent the "catastrophic effects" of late stages.

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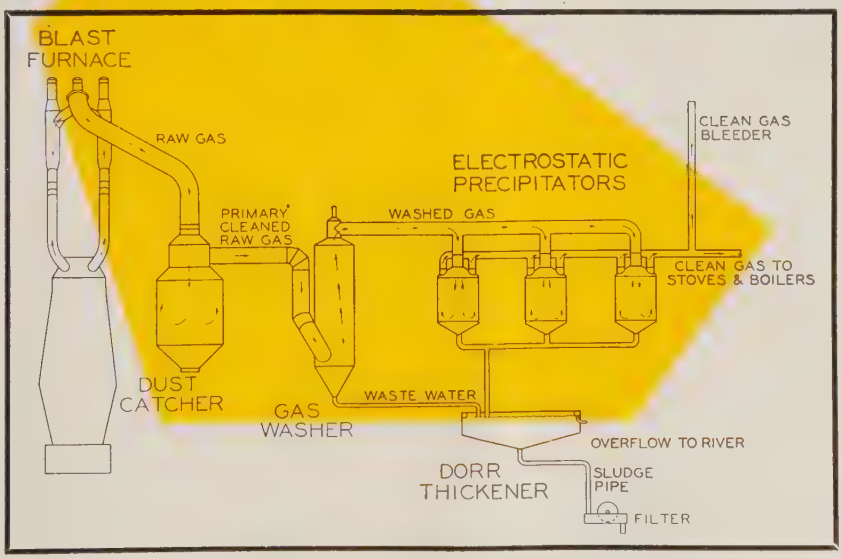


Artist's drawing (at left) shows how stream and air pollution are controlled by blast furnace installation. Gas is cleaned by precipitators, washed by huge scrubber, and returned to furnace. Dirt is collected as sludge and reused, while the cleaned water returns to river.

IF YOU HAD BEEN a member of a certain group of Cleveland city officials, councilmen, and citizens on a certain day late last fall, you would have seen something which would have amazed you almost as much as an atomic cloud, and made you a great deal happier.

First of all, of course, you would have had to have

been out at the central furnaces and docks of the American Steel & Wire Division of the United States Steel Corporation . . . in the Cleveland "Flats." You would also have to have been one of Cleveland's diligent fighters against air pollution. And, you would have remembered 1947 . . . the year in which "Flats" industries dumped better than 50 tons of dust per month on the downtown streets.

You would have been aware that industries had cooperated with the city so well since then that the figure had been cut by 22.7 tons a month. You would have been told that you were about to witness another big step forward . . . the control of stack gases coming from the huge boiler house of "central furnaces and docks."

As you thought back you would have remembered seeing smoke flowing in thick, unending streams from the blast furnace stacks a short time ago. It probably would have seemed that it would never stop. Today, however, as you looked up, electrostatic precipitators and a 9-story primary gas washer had gone into action . . . and suddenly the smoke was no longer there and in its place was clean, heat-shimmering air.

Then you would have been led around by company officials to see the stack gas scrubber and washer which sprays about 7 million gallons of water in a 24-hour period on gas coming from the blast furnace process. You would also have observed electrostatic precipitators which use 75,000 volts to further clean blast furnace gas at the rate of 130,000 cubic feet per minute.

You would have discovered that the new equipment removed more than 99 percent of the flue dust from the blast furnace gas before it is used as a fuel in the furnace stoves and nearby boiler house, where it burns with an emission of smoke and dust particles 40 times less than the Cleveland city ordinance requires.

It would have been further explained that the flue dust particles removed in the two cleaning processes are pumped in liquid solution to the sludge removal unit, called a Dorr thickener, where the flue dust from the primary gas washer and electrostatic precipitators is gathered by a large rotating rake into a thick sludge at the bottom. The thickener cleans 5 thousand gallons of water per minute, you would have been told. After further processing, this material is returned to the blast furnace as a raw material . . . and the water, you might have asked about . . . is returned to the Cuyahoga River with more than 95 percent of the dust particles removed . . . indeed, cleaner probably than when it was pumped out.

At a luncheon later you would have heard company officials comment that the control of air pollution and more efficient equipment operation, reduction of maintenance costs, and reuse of raw materials complement each other. You would have heard it announced that the same type of equipment was being added to other blast furnaces.

Chances are, you would have gone away happy.

Pictures by courtesy of United States Steel Corp.

An Effective Eye Program

(Continued from page 23)

effectiveness of the worker, there should be a continuing educational, training and inspirational effort by the employer, using all means available and creating some if there be need. Aim to produce a conscious knowledge that the safe way is the best way to do things.

13. If a selective goggle program is to be enacted, plans should be made for the progressive development of this into a full-fledged 100 percent goggle program.

If planning is good, execution should be equally good provided management is determined and sincere. Since a program is a management decision, management should open the program with a statement of its policy on the program. The details of a program should be set down in writing for all workers to see and to understand. Management should set an example by sticking to program requirements in their entirety.

A program also needs to be followed up. Accident records will provide a basis for comparison which, in turn, will reveal progress being made. Where a selective goggle program is in force, records may also reveal additional areas where the goggle program should be applied.

Periodic safety inspections of a plant by an employer will reveal the degree of compliance with an eye safety program. Infractions of goggle-wearing rules should be dealt with by management in a way that is consistent, just, and commensurate with the circumstances of the violation.

Bear in mind these salient points: there is an eye safety problem in industry and there is evidence that it is most critical in small plants. A plant's efficiency is inversely proportionate to its accident frequency. Since efficiency is a management responsibility—accident prevention is a management function. Eye accidents, as do all accidents, follow the laws of chance, which are rendered less of an influence by the installation of controls. The control of eye injuries stems from the control of hazards. Employers should plan for the control of hazards as a management function and establish an organized plan to effect such control and to follow-up in line with management principles. There are available informative and instructive publications. An employer intelligent enough to run a business is intelligent enough to use the material constructively. Personal professional assistance is available if needed. Mandatory adherence to the plan is the most effective basis. It can be made a part of the job and a condition of hiring. Worker cooperation is of course essential. One hundred percent goggle protection provides optimum safeguarding and is the ultimate of all eye accident prevention programs. The occupational vision conservation program is the broadest and all-inclusive sight protection program. It includes the eye accident prevention program and should be the goal of all small plants.

Pictures by courtesy of American Optical Company through the American Mutual Liability Insurance Company.

The Industrial Nurse

Educational and Conference Calendar of Interest to the Industrial Nurse

The American Association of Industrial Nurses in conjunction with the Industrial Medical Association, the American Industrial Hygiene Association, and the American Association of Industrial Dentists is holding its 13th Annual Industrial Health Conference at Memorial Hall, Buffalo, N. Y., April 23–29, 1955.

The National League for Nursing is holding its second Annual Convention at Kiel Auditorium, at St. Louis, Mo., May 2–5, 1955. This will be an educational and scientific meeting.

Dr. O. Tod Mallery, Jr., Director of Industrial Health at the University of Michigan, will conduct a one day Institute for Industrial Nurses at Boston College, Boston, Mass., on Saturday, May 21, 1955.

The University of Alabama School of Nursing at Tuscaloosa, Alabama is offering a two-week, two-semester hour course in "Nursing in Industrial Health Service," July 18th to July 30, 1955.

Useful Publications for Industrial Nurses

THE NATIONAL Health Council publication, "Directory of Member Organizations," is available at a charge of 50 cents from the National Health Council, 1790 Broadway, N. Y. 19, N. Y. This booklet contains useful information concerning the scope of activities, the Central Office and the Executive Officers of the voluntary health agencies in the United States.

"Health Maintenance for Greater Efficiency," may be procured from the Superintendent of Documents, U. S. Government Printing Office at Washington, D. C. for 25 cents.

It is becoming increasingly clear to the business executive that the best way to meet the problem concerning his workers' health is to keep his employees well. Experience with health services in plants has indicated that losses due to sickness absenteeism can be reduced by one-third to one-half. This does not take into consideration the increased efficiency brought about by the proper treatment or counseling of the employee who was only half sick but remained on the job.

The maintenance of plant machinery and equipment has long been a function of recognized value in the business firm. The maintenance of the health of employees—probably the firm's most costly investment—is equally important.

Industrial First Aid

INDUSTRIAL FIRST AID is defined as the emergency handling of any accident or illness, or the care of any accident or illness requiring industrial treatment and provided not more than one initial and one revisit is necessary. Serious injuries or illnesses are treated pending the arrival of a physician.

In an emergency, anyone may render first aid. However, to insure the best care possible and avoid unnecessary delay, certain essentials in procedure, personnel, and equipment are necessary.

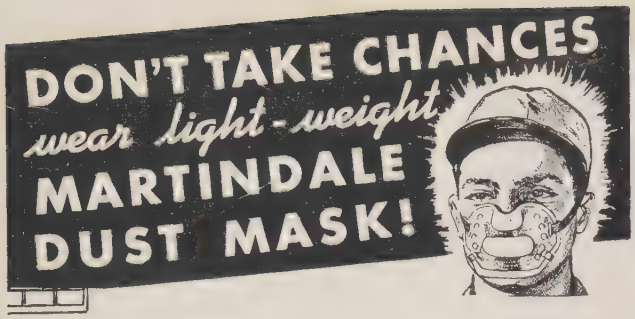
Requirements are:

1. Trained First Aid Personnel.
2. Adequate Supplies and Equipment.
3. A fixed procedure for handling persons in need of prompt medical care.

Personnel

A first aider should have training through one of the following sources: American Red Cross; U. S. Bureau of Mines (for miners and tunnel workers); U. S. Army, Navy or Air Force; Fire, Police, or Civilian Defense Departments; qualified medical personnel, such as consulting physician or nurse.

A first aider should: 1. Show interest and be intelligent; 2. Be available at all times. Trained first aid relief



For NON-TOXIC DUSTS EXCEPT FREE SILICA

It's foolish to breathe dust and dirt when it can be avoided in thousands of instances by using a face-fitting Martindale Aluminum Mask and replaceable cotton filter pads.

In factory, store, feed mill, etc., these masks offer excellent protection against over 400 dusts such as wood, coal, grains, rust, paper, insect powders, etc.

Made of soft rolled aluminum, masks weigh less than ½ oz. They permit free speech, clear vision, easy breathing. Only clean gauze touches the skin. WORKERS LIKE THEM.

MARTINDALE PROTECTIVE MASKS $.30 each
No. 1 Refills (Standard wt.) .02 each
No. 2 Refills (Heavy wt.) .02½ each

Write for quantity discounts.

MARTINDALE ELECTRIC CO.
1397 Hird Ave., Cleveland 7, Ohio

(For details, use Key # D-31 on card on page 85)

should be provided; 3. Be a woman if the majority of the employees are female; 4. Be under the supervision of a physician.

Location

The first aid area should be: 1. Located near the source of accidents if possible; 2. Plainly marked; 3. Well lighted; 4. Near toilet facilities and a sink with hot and cold running water; 5. Located where a reasonable amount of privacy and quiet can be expected; 6. Easily accessible to the first aider for supervision and maintenance, so that self-treatment can be eliminated and a minimum of time lost in rendering treatment.

Equipment

1. Wall cabinet and/or first aid kit.
2. Chair or stool.
3. Small table with drawers on which records may be kept.
4. Waste receptacle with step-on cover.
5. Liquid soap dispenser and paper towels adjacent to the sink.
6. A bulletin board giving the following information: (a) Name of First Aider and his department and that of Assistant First Aider; (b) Name and telephone number of the doctor on call; (c) Name and telephone number of the nearest hospital; (d) Panel of neighborhood doctors with telephone numbers for use if the plant physician cannot be reached; (e) Workmen's Compensation Notice if required in State.
7. A first aid manual should be available.
8. Record forms for recording accidents and treatments.
9. Stretcher to be placed in white oil cloth, canvas, or box, and hung in a conspicuous place. It should contain:

(a) 1 blanket

(b) Small box containing: 1 roll of 3-yd. sterile gauze; 2 rolls of 2″ bandage; 1 pair scissors; 2 aromatic ammonia inhalent ampules; 4—2 x 2 sterile gauze pads; 2—4 x 4 sterile gauze pads.

This equipment should be inspected monthly and missing articles replaced

Supplies

1. First Aid Cabinet and/or kit:
   - Tr. of green soap—small bottle
   - Rubbing alcohol—1 pint
   - Skin antiseptic—non-toxic—small bottle with glass app.
   - Adhesive remover—small bottle
   - Eye solution—small bottle, eye cup and separate eye dropper to be cleaned before and after use
   - Aromatic ammonia ampules—box
   - Gauze—3″ x 3″ sterile packages—6
   - Bandage—Gauze—1″, 2″, 3″—2 each
   - Triangular bandage—1
   - Adhesive finger bandages—1000
   - Bicarbonate of Soda ½ pound
   - Burn medication
   - Elastic bandages 2″—4
   - Adhesive—1″—2 rolls
   - Applicators—small package
   - Cotton absorbent—small package arranged to keep surplus cotton clean
   - Tongue depressors—6
   - Splints—Basswood—3
   - Safety pins—6
   - Scissors—1 bandage and 1 skin
   - Splinter forceps
   - Hand magnifying glass
   - Paper cups—6
   - Paper tissues—1 box
   - Salt
   - Analgesic—Aspirin—small bottle
   - Calomine lotion—small bottle
   - Emesis basin—2

   Additional supplies should be added when a special hazard exists.

2. Additional supplies desirable but not essential for all locations: Hot water bottle or heating pad, Ice cap, Safety razor and blades, Assorted jars and basins, Thermometer, Hot plate and covered pan, Enamel basin for hand or foot soaks.

Records

1. The First Aid Day Log is a basic record. Notations should be made in a chronological order and in ink for all treatments or advice given, whether it be for an occupational or non-occupational reason.

2. A Monthly Summary of Reported Cases can be compiled from the day log.

General Procedures

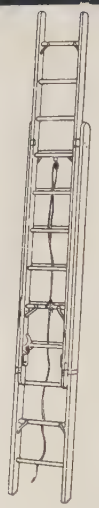
1. Maintenance and use of First Aid equipment and supplies.
   (a) The First Aider should have time to keep the equipment clean. It should be inspected at monthly intervals using a check list of supplies as an inventory.
   (b) Labels should be legible. Nothing should be used from an unlabeled bottle. Bottles should be well stoppered.
2. Procedure for handling cases:
   It is desirable that there be a fixed procedure for handling persons in need of prompt medical care. When a serious injury occurs, unless such a procedure exists, there is a tendency toward confusion with the result that the needed care is greatly delayed and its effectiveness is reduced.
   Precise location of the First Aid Cabinet or Kit should be known to all employees.
   Every employee should know the type of medical service available.
   The First Aiders' names and departments should be posted in a conspicuous place.
   No one except those designated should be permitted to use the first aid equipment or give first aid unless the situation is very unusual.
   First aid cabinet and/or kit should be closely supervised and unlocked as the key may be lost or misplaced at an inconvenient time.
   A small amount of reserve supplies should be kept on hand.
   First aid cabinet and/or kit should be kept immaculately clean and well stocked at all times.
   Records should be kept of every treatment or advice given. The record should be made at the time of the accident or treatment.
   Follow-up on individuals with injuries should be done the following day.

Lead Absorption
(Continued from page 47)

week intervals until his lead level is safe.

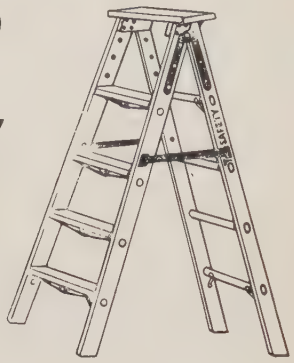
The program also provides environmental control and worker education. Important features of it are proper ventilation, use of dust clothing and protective equipment, floor wetting and drainage, adequate sanitary facilities, eating quarters segregated from lead areas, separate lockers for work and street clothing, good plant housekeeping and teaching supervisory personnel and workers how to avoid undue exposure.

BABCOCK



Ladders

DESIGNED *for* **SAFETY**



Extensions
Singles
Stepladders

Built for safety and service. Industrial ladders of *Top-Quality* material and workmanship.

Underwriter's Approved

BE SURE BE SAFE BUY BABCOCK

The W. W. BABCOCK CO., Inc. · BATH, N. Y.

(For details, use Key # D-32 on card on page 85)

Comfortable

Knit-lined PIONEER Stanzoils®

At home a dog offers its owner a daily example of real comfort. PIONEER's objective in designing Stanzoil Duplex Industrial Gloves is to give those who wear them the same kind of comfort at work. For comfortable hands are busy hands, and protected hands are healthy hands.

Where comfort, maximum protection, tensile strength and abrasion, tear, aging, flame and heat resistance are important, and a safe non-slip grip necessary . . . where resistance to alcohols, acids, bases, oils, amines, greases or ketones is essential . . . where all these specifications form the basis for your buying decision, there's only one answer . . . PIONEER's Neoprene Stanzoil Duplex Gloves.

Pick the best, most economical glove for the job from 32 PIONEER styles (including neoprene, rubber and plastic gloves), weights, sizes, and colors shown in the "PIONEER Industrial Glove Catalog."

NL-42 Duplex is a *heavy weight* elastic knit-lined glove of oil, acid resistant neoprene with straight fingers and non-slip grip. Sizes 10, 11, in a 12" length.

PIONEER Stanzoil

the PIONEER Rubber Co 244 Tiffin Road Willard, O., U.S.A.

Quality Gloves for over 35 Years

(For details, use Key # D-33 on card on page 85)

OH YES, THEY WORK HERE TOO . . .

RECENTLY, A LARGE cleaning plant and a chemical plant had perfect safety records broken by severe office accidents. Manufacturing management often forgets that office workers are open to safety hazards too. In this case, 4 secretaries slipped, fell and suffered fractures on floors or stairways. Eagerness to maintain a good safety record in the plant is no excuse for overlooking the hazards in your office.

Learning . . . . . the hard way

GUARD TAKEN OFF . . . HAND TAKEN OFF . . .

A SERIOUS accident occurred in a midwestern tannery a short time ago. An automatic machine took off the right hand of its operator. The circumstances around the accident bear looking into.

When a guard was originally put on this machine it was discovered that it cut down the production of the machine. Since there was no knowledge of injuries previously on this type of machine, the guard was taken off. The operator's hands didn't have to come close to the machine it seemed.

The operation, unguarded, continued for a year without even a close call. Then a new operator was placed on the machine. The first day the employee was learning the operation his hand caught in the machine. Probably, in his excitement he forgot to press the foot release lever. It could be called inattention, inexperience, or even lack of confidence . . . but the result was the same . . . the loss of a hand.

The proper guard is now in place. The machine will instantly release when a man's hand hits the barrier guard. Production may even be a bit slower, but. . . . Oh yes, since the accident the tannery has been informed that there have been other mishaps of a similar nature in an eastern tannery.

REACH . . . BUT DON'T LEAN!

A CARPENTER working on the roof of a building called for his level. The foreman threw the level and the carpenter fell while leaning over to grab it. He is now a paraplegic. The laws of gravity are known to everybody. Applied to the human body, they mean that when the center of gravity of a person passes outside the center line of his legs, he will fall. Watch a steelworker in the setting up gang. He will reach for a piece of steel being hoisted to him, but he will never lean over. If he cannot reach it while standing erect, he will let the steel go past him.

Fog Application of Cutting Fluids

BECAUSE OF THE widespread and increasing interest in the application of cutting fluids as a fog or mist and the lack of factual information on the subject, the ASTE Research Fund Committee is sponsoring an investigation into such applications. Objectives of this research project are to determine the advantages and limitations of the method, obtain representative metal cutting performance data, outline fields for further study as indicated by the results of the project and explain indicated results in terms of current theories on fog application.

Initial phase of the project will be a survey of the literature covering uses of fogs as applied to cutting tools and bearings, and as used in heat transfer generally. Since valuable information has been published on each of these applications independently, it is assumed that a compilation of the known information will provide new keys to the physical, cooling and lubricating effects of mists and fogs.

Laboratory tests will be conducted in such a manner that the data obtained will be directly comparable to results obtained with more conventional methods of applying cutting fluids. Controlled variables in the investigation will be: workpiece material, cutting speed, feed, depth of cut, tool material and configuration, and types of cutting fluids and additives used with continuous and intermittent cuts. Methods of, and equipment for, generating fogs will also be studied. Uncontrolled variables that will be measured include: tool life, workpiece surface finish, forces generated, temperatures induced and power required.

The current project resulted from a proposal by the Machine Tool and Metal Cutting Laboratories of Massachusetts Institute of Technology. Trained personnel of the laboratories will perform the necessary investigations, follow through the analysis and prepare a report.

VI-LAN CLEAN

dispensers

on the job and in wash rooms will prevent the menace of

dermatitis

. . . lost man hours and lost profits!

This new antiseptic all-purpose skin cleanser contains ACTAMER, a non-toxic bacteriostat, perfected by Monsanto Chemical Company, exerting a powerful inhibitory action against harmful skin bacteria for 48 hours after use.

VI-LAN CLEAN does what ordinary soaps can not do. It removes greases, oils, paint, acids, graphites, printing inks, asphalt, rubber, gasket cements and other industrial soils and sediments, and provides the prophylaxis inhibiting the germs which too often put employees out of commission.

So, serve and protect your employees with VI-LAN CLEAN—install the new VI-LAN CLEAN dispensers in every wash room and on critical on-the-job locations. MAY BE USED WITH OR WITHOUT WATER.

To fill dispensers VI-LAN CLEAN is packed in polyethylene bags, allowing you to release any amount of the cream simply by finger pressure on the bag without waste. This container also may be used conveniently as a portable dispenser on trucks and outside jobs.

Also available in convenient pint, quart and gallon containers for home and shop use.

Write for descriptive folder today!

DAMERON enterprises, inc.
427 So. 20th Street
Louisville 3, Kentucky

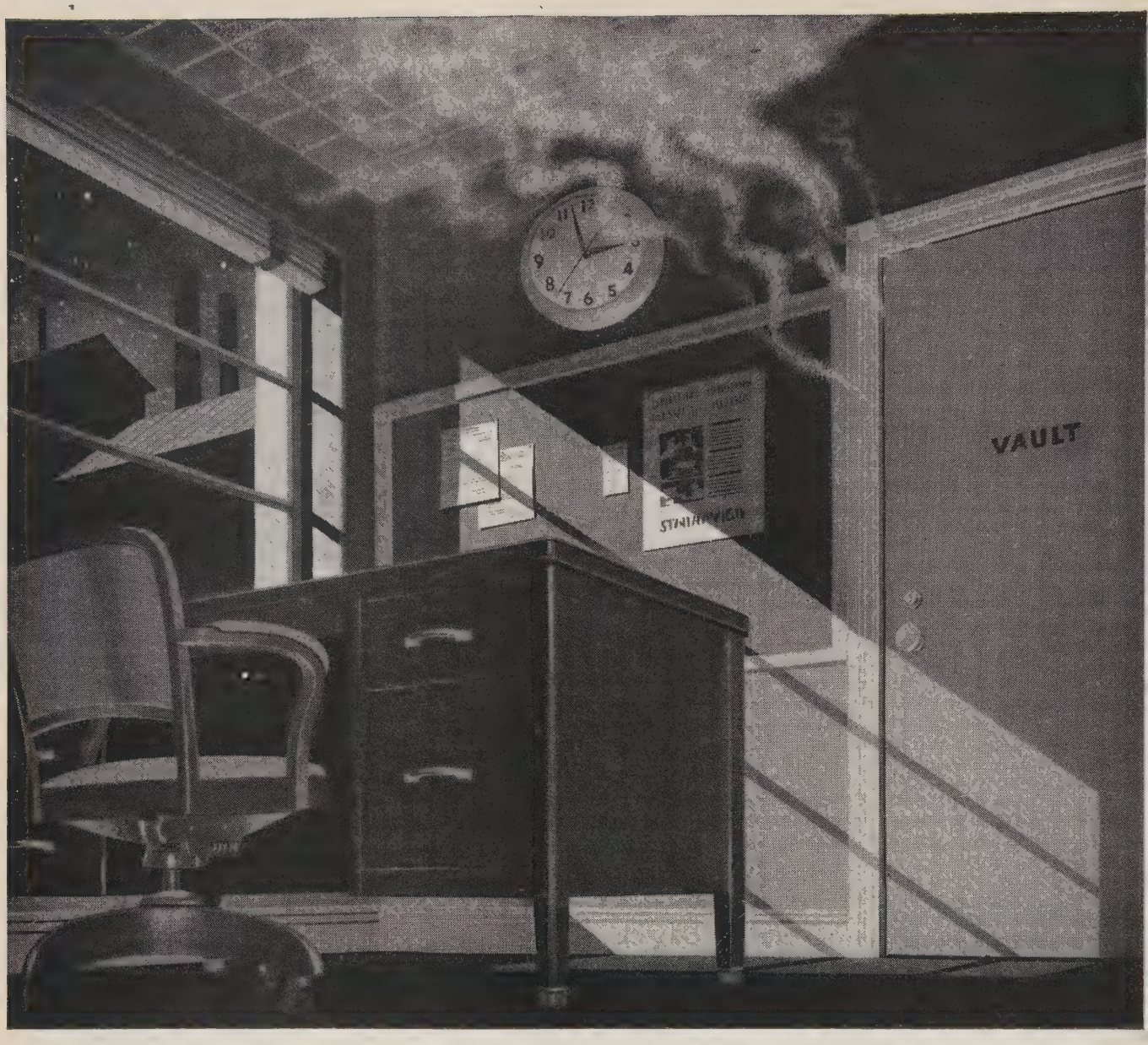
IT CLEANS WHERE OTHERS
NEW! VI-LAN CLEAN NEW!
The Antiseptic Skin Cleanser With Lan-Act 12
IT CLEANS WITH OR WITHOUT WATER
"May Be Used On Face, Hands, and Other Parts Of Body"
DIRECTIONS FOR USING

(For details, use Key # D-34 on card on page 85)

Sanitation Seminar

A TWO DAY trade show and seminar devoted exclusively to cutting costs and increasing efficiency in building sanitation is announced by I. Edward Brown, Inc. There will be over 50 exhibits of sanitary supplies at the Hotel New Yorker in New York City on April 13 and 14. Hours on the first day will be two to five P.M. and seven to ten P.M.; on the second day, from noon to six P.M.

The seminar program will cover all aspects of building sanitation. Many sanitation experts will be available to discuss problems and answer specific questions. Movies will show how to train custodial workers in efficient cleaning methods. Free admission cards can be obtained by writing to: I. Edward Brown, Inc., 440 Canal Street, New York 13, N. Y.



WHAT HAPPENS NEXT?

If management has been wise, a fire tragedy will be stopped before it starts...if not, in 20 minutes extensive destruction and total loss could readily be the result.

First-rate fire protection is essential to the continued success of any business. With C-O-TWO Smoke or Heat Fire Detecting Systems, plus C-O-TWO High Pressure or Low Pressure Carbon Dioxide Type Fire Extinguishing Systems, as well as PYRENE Air Foam Type Fire Extinguishing Systems for specific outdoor locations, your plant can have fast, positive round-the-clock fire watchman service simultaneously at each fire hazard point . . . a fire tragedy is stopped before it starts.

Furthermore, there is a personal sense of responsibility inherent with PYRENE—C-O-TWO Fire Protection Engineers that assures you of fully adequate firesafety . . . a definite plus in your behalf. Whether it's fire detecting or fire extinguishing . . . portables or built-in systems . . . PYRENE—C-O-TWO means top quality backed by experienced engineering that results in operating superiority for you at all times.

Act now . . . don't take unnecessary chances with your investment any longer . . . the extensive experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Remember . . . a plant-wide fire protection survey skillfully executed today could be the means for greater profits tomorrow.

Pyrene

PYRENE — C-O-TWO

NEWARK 1 • NEW JERSEY

Sales and Service in the Principal Cities of United States and Canada

C-O-TWO

COMPLETE FIRE PROTECTION

portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

(For details, use Key # D-35 on card on page 85)

The Fire Front

January Fire Losses

ESTIMATED FIRE losses in the United States during January amounted to $75,265,000 the National Board of Fire Underwriters has reported.

According to Lewis A. Vincent, NBFU's general manager, this loss represents a decrease of 13.0 percent from losses of $86,493,000 reported for January, 1954, and a decrease of 10.3 percent from losses of $83,881,000 for last December (1954).

These estimated insured losses include an allowance for uninsured and unreported losses.

In-Plant Fire Brigades

NINE OUT OF TEN industrial fires can be controlled by a combination of trained personnel backed up with adequate portable fire-fighting equipment, according to the Fire Protection Institute. This conclusion is based upon results of a survey of safety directors from nearly 500 large factories in the United States.

These safety directors reported that 87 percent of the 1,759 fires on their properties in one year were put out, while they were small, by plant fire brigades and trained plant personnel armed with fire extinguishers and other portable fire-fighting equipment.

Significantly, the largest companies not only showed the greatest interest in equipping and training company fire brigades and personnel, but also reported the lowest ratio of fire losses. Nearly 90 percent of all plants queried in the survey reported they had established, well-equipped and trained fire brigades or plant protection (security groups). Nearly 60 percent of them have both. One third of the factories reported no fires at all during the 12 months.

Despite heavy reliance on their own manpower and equipment, industry safety directors reported that except in exceptional cases where a fire was extinguished almost immediately, it is standard practice to notify the local professional fire department, so that their own forces can be backed up with reserves in case the blaze gets out of hand. They report that the municipal departments do not object to answering a call and finding that the fire has already been extinguished.

Loss of working time due to these fires was extremely low. This was considered by the safety directors of great importance both to the employees and to management. As one director commented, "Of business seriously damaged by fire, 43 percent of them never resume operation. Of the remaining 57 percent which get back on their feet, 28 percent of them fail within the next three years. While this may not apply in the same degree to large corporations such as ours, certainly our employees have much to lose if one of our plants is burned out. Sometimes a corporation has found it economically advisable to rebuild in another location and the employees are out of work if they can't move to the new city."

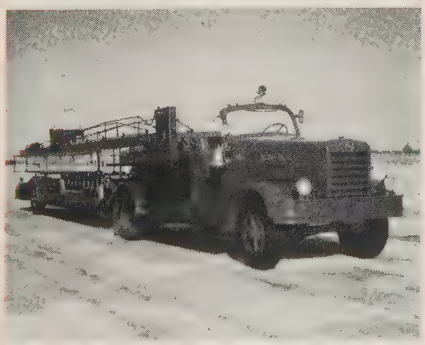
Value of Fire Brigades

The industrial safety directors were almost unaminous in their opinion that plant fire brigades furnish the least expensive "first line of defense against fire," although several admit that they have had a difficult time convincing their management. This again is mostly a trouble found only in smaller companies.

Several questionnaires mentioned the fact that quite a number of industrial plants are located some distance from the heart of town and nearby fire departments. They stated that in this case, the establishment of a well-equipped company fire-fighting force larger than generally thought needed is vital to plant safety and continued production.

One comment by a safety supervisor was directed at his local community. He wrote, "If we had called out the Municipal Fire De-

New Fire Truck's Ladder Goes Up in 7 Seconds



THE NEW 59-foot, 7-inch "hook and ladder" fire truck, equipped with a 75-foot aerial extension ladder, is the first of a record order of 25 aerial ladder trucks being delivered to the New York City Fire Department. The truck's aerial ladder can be catapulted into the air in 7 seconds and fully extended within 19 seconds of its release. This type of truck is tailor-made to New York City firefighting needs.

Picture by courtesy of Four-Wheel Drive Co.

"Fire-Chief Finished"
WELDING CURTAINS—SALVAGE COVERS
to confine the welding operation to a given area
used to protect machinery, and other equipment from water, dust and snow.

MADE OF CANVAS
impregnated with Hooper's Fire Chief treatment under their patent which carries the Underwriters' Laboratory seal.
A. Smith & Son Inc.
Established Eighteen Hundred Sixty-Seven
MANUFACTURERS OF REEVES STRETCHER
Ridge Ave. at Green
Philadelphia 23
"If It's Made of Canvas, We Make It"
(For details, use Key # D-36 on card on page 85)

STOP IRRITANTS IN CUTTING OILS, SOLVENTS, THINNERS, PAINTS
PREVENTO
PROTECTIVE CREAM No. 200

The time to deal with dermatitis is BEFORE it starts. Irritants present in industrial processes and products may lead to serious skin infections.
PREVENTO No. 200 is an antiseptic skin-protecting cream which guards against bacteria entering tiny skin abrasions. Spreads evenly, easily and has a delicate, agreeable aroma. Shop employes like to use it and appreciate this added safety measure.
CONTAINS G-11 BRAND OF HEXACHLOROPHENE
Literature on Dolge products relating to the prevention of dermatitis on request, or consult your Dolge Service Man.
FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN
dependable DOLGE
WESTPORT, CONNECTICUT
(For details, use Key # D-37 on card on page 85)

partment for every fire we had last year, the additional taxes to maintain the department would have cost us and the taxpayers more than the cost to maintain our company fire brigade. We found out that we not only save money, but also provide ourselves with an immediately available force to fight blazes. In addition, when the Municipal Department answers our calls, it leaves the rest of the community virtually unprotected because we are some distance from the fire house."

Value for Small Plants

The Fire Protection Institute suggests that smaller industrial plants study the economics of providing themselves with plant fire brigades as it is in the smaller plants that the greater fire losses apparently occur. It pointed out also that large industrial plants consider their fire brigades as an aid to employee morale as well as insurance against fire destruction.

Although individual company reports were furnished to the Fire Protection Institute on a confidential basis, a few of the industries surveyed included: chemical plants, sugar refineries, oil and gasoline refineries, atomic energy plants, steel, copper and aluminum fabricators, automobile assembly plants, paint manufacturers, airplane factories, moving picture and radio studios, flour mills, soap manufacturers, electrical manufacturers, distilleries, shipyards, machine tool works, pharmaceutical plants, rubber manufacturers, paper mills and even manufacturers of fire engines and extinguishers. (Yes, they had fires too, but they put them out with their own products.)

NFPA Annual Meeting

The 59th Annual Meeting of the National Fire Protection Association will be held at the Hotel Netherland Plaza, Cincinnati, Ohio, May 16–20 inclusive.

Engineer points out carbon-dioxide installation.

Learned:

One Fire Lesson...

This Valuable Machine . . .

Is Now Protected . . .

By Fire Smotherer

IF YOU DON'T THINK that protection of vital pieces of production equipment against loss or damage by fire is important, talk to Meyer Kirstein, president of the Hartland Tanning Co., Hartland, Maine. Mr. Kirstein says that in addition to a production unit's fire loss, one has to consider costs of water damage to the plant and work-in-process, lost production expenses, and the cost of having the vital production operation performed elsewhere while damage is repaired . . . if you're going to keep the fire-struck plant producing.

These considerations completely ignore the possibility of injury to employees resulting from the fire and the chance that a fast spreading fire could engulf the entire plant.

He should know. His Hartland tannery experienced a flash fire during the summer of 1954 which consumed almost 50 thousand dollars of property and knocked out the tannery's one spray unit and oven dryer which coated "sides" with a coating which seals and gives them a high polish finish.

Here's what happened. An arcing electric motor ignited suspended, minute particles of half-second butyl nitro cellulose in the spray unit and residues on the conveyor. With an almost instantaneous mushrooming effect, the fire spread down the entire 96-foot length on the sprayer-drier. The spread of fire was so fast that even with the intense heat generated, the fire outdistanced opening water sprinkler heads above the assembly. All told, 76 heads actuated.

The water spray kept the fire down, permitted it to be extinguished within an hour, and limited fire damage to adjoining sections of the plant. However, water damage to work-in-process and machinery was most apparent just outside the immediate fire area and on lower floors where the water deluge accumulated.

Mr. Kirstein pays tribute to his insurance underwriters by saying, "They were here immediately after the fire, offering assistance and surveying the loss for settlement. While no insurance can cover some of the secondary expenses of a fire, their aid and counsel mate-

rially helped in re-starting production in the shortest possible time." It is interesting to note that plant efficiency was cut 25 percent while the machine was out.

Immediately plans were made to replace the destroyed unit with a new tandem, spray units and oven dryers. Simultaneously, extinguisher engineers were called upon to design equipment that would immediately detect a fire in the new unit and cause it to be smothered by carbon dioxide before serious damage to the machine could result or sprinkler heads open.

The new, recently installed $40 thousand dollar machine is 12 feet wide, 126 feet long, and an average of 5 feet high. It can process 350 sides an hour.

Operation of Unit

Sides are hand fed onto a wire mesh conveyor, pass through the spray unit where a rapidly horizontally-rotating, 4-armed and -headed sprayer coats them with butyl nitro cellulose. Then they are carried by the conveyor through the steam heated, 170° F., oven dryer. At the end of this tunnel they are picked up by another conveyor and the spraying-drying operation is repeated with duplicate treatment.

The new installation was designed to minimize the possibility of fire. Independent conveyors limit the spread of flammable residue; power blowers whisk away explosive vapors continuously; all electrical equipment is of the explosion proof type and other electrical-static safeguards are provided; finally, the assembly itself is scrupulously cleaned once a week.

In spite of these precautions should a blaze occur, a carbon dioxide fire extinguishing system, made by Walter Kidde & Company, stands ready to put it out automatically, 24 hours a day.

The sudden heat acting on a rate-of-temperature-rise fire detectors mounted throughout the unit immediately trips nine, 75-pound cylinders of the fire smothering gas. The pressurized gas escapes from its cylinders and is routed through piping to multijet nozzles in the spray units, in the exhaust air ducts, and others flanged into oven dryers. The volume of carbon dioxide introduced lowers oxygen content to a point which will not support combustion, and the fire is smothered in seconds.

Equipment Shut-Down

Built into the piping network are pressure-operated switches and trips which are actuated by the passage of the gas. They cause electrical power for the sprayer to be turned off, stopping the conveyor, spraying equipment, exhaust fans, and recirculating blowers. They also close all dampers.

In addition to its superior fire extinguishing characteristics, carbon dioxide has other qualities which Mr. Kirstein claims as an advantage. "Being an inert gas," he states, "it cannot damage the sprayer-driers, electrical equipment or work-in-process. In addition, as it is eventually absorbed into the atmosphere following discharge, it leaves no mess to be cleaned up following the blaze."

Pictures by courtesy of Walter Kidde & Company.

Code for Maintenance of Fire Extinguishers

THE FIRE PROTECTION Institute has announced the publication of "Safety Code for Inspecting, Recharging and Maintaining Portable Fire Extinguishers." This book was prepared as a public service by the Fire Equipment Manufacturers' Association, Inc.

Neglected Extinguishers

Thousands of fire extinguishers throughout America are useless in an emergency. Somebody bought them and forgot them. Neglected, many without extinguishing agents, others corroded by years of abuse and disuse, they are unable to cope with the potential disaster of fire and its heartaches.

Moving on a planned course, the seventeen member companies who belong to the Fire Equipment Manufacturers' Association pooled their knowledge and experience. The code is an industry prepared and approved guide for inspecting, recharging, testing and maintaining all types of portable fire extinguishers.

These books can be obtained by writing the Fire Equipment Manufacturers' Association, 813 Clark Building, Pittsburg 22, Pennsylvania. The cost is 50¢ each.

Industrial Fire Schools

THE INDUSTRIAL firefighting school of the Ansul Chemical Company, at Marinette, Wis. has scheduled twelve different three-day classes for the spring and summer of 1955. The first class is scheduled for May 23–25, and the final one September 19–21.

The courses are open to industrial plant safety personnel, fire marshals, municipal and military firefighters and other interested personnel. Registration is limited to 25 persons in each class, with applications accepted on a first-come, first served basis.

During the course of instruction on the company's 10-acre fire test field, the students are taught the latest techniques of fire extinguishment with various extinguishing agents. Students are also encouraged to bring any special fire extinguishing problems to the school.

Dates for classes for which applications are now being accepted are May 23–25, June 13–15, June 20–22, June 27–29, July 18–20, July 25–27, August 15–17, August 22–24, August 29–31, September 12–14, and September 19–21.

Participants must pay their own transportation and board while in Marinette. For further information, write Director Fire School, Ansul Chemical Company, Marinette, Wisconsin.

Fighting Ice and Smoke . . . as well as Fire

. . . takes good equipment and training

ONE SUB-ZERO DAY last winter in Fargo, North Dakota a large hotel reported a blaze on the first floor. Firemen responding found the second and third floors so thickly blanketed with smoke they could not see. Ice formed thickly too, on firemen's helmets, as hoses went into play.

It was then that good equipment and intensive training paid off. The oxygen deficient atmosphere of the smoke-filled floors made ordinary masks useless, but two firemen equipped with canister-type, oxygen-generating apparatus went through the choking gloom to bring out three hotel guests who would probably have been asphyxiated otherwise.

As for the ice . . . firemen had an answer for that, too. Their new helmets of laminated plastic could be rid of accumulations of ice more easily and quickly than their old ones. Not only that, a big factor in North Dakota's winter climate, but the helmets also had a long service life, high strength and shock absorbing qualities. *(Cont'd on next page)*

. . . says this chief

Fargo, North Dakota Fire Chief Wells (right), faces unusual fire problems in cold climate of his city. Ice forms on fighters' helmets in picture (at top), but is easily removed because of plastic construction of hats. Smoke is also a serious distraction for firemen, but department whips it with self-contained masks. Picture (immediately above) is sample of a very important part of department's success formula . . . adequate training in the use of all types of fire equipment.

"Simplest and Safest"

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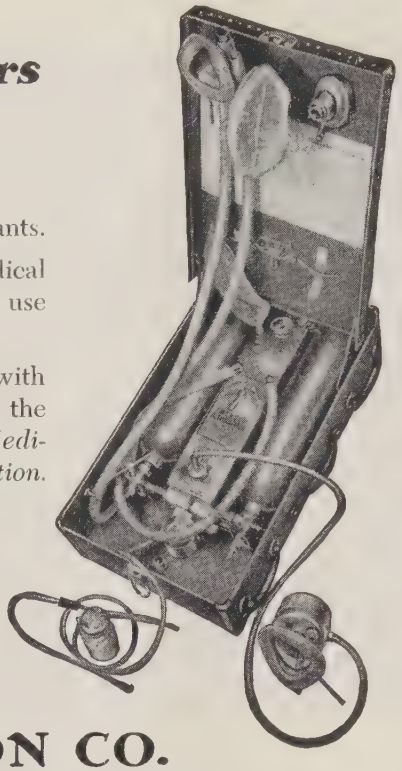
Resuscitators



SIMPLE to operate.

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PROVIDE SUCTION, alternating with pressure, to give vital aid to the circulation. Write for free *Medical References on Resuscitation.*

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(For details, use Key # D-38 on card on page 85)

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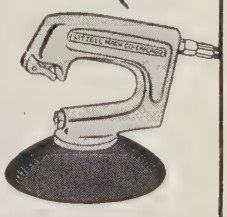
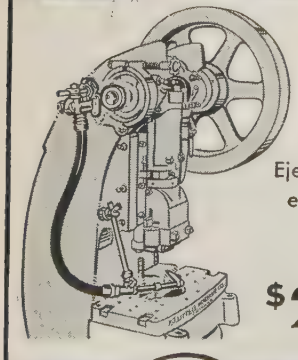
Wins Immediate Approval

SHEET LIFTER
for handling sheets of steel, glass, plywood, boxes, cabinets
BY AIR
$32.00



LOST FINGERS ARE COSTLY



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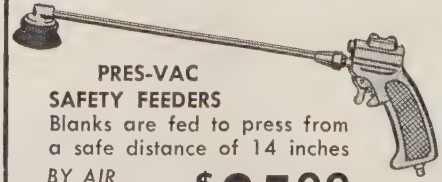
Ejects parts at each stroke of press
BY AIR
$29.00



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Blanks are fed to press from a safe distance of 14 inches
BY AIR
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Write for FREE Catalog

(For details, use Key # D-39 on card on page 85)

A few months later, firemen returned to the hotel again, this time to fight a much larger fire. The alarm had been delayed, 9 to 20 minutes, and the blaze had gained great headway when the fire fighters arrived. Again, good equipment and training won out. Firemen were able to rescue 155 persons, many from smoke-filled upper floors.

In talking about his department, Fire Chief Fred J. Wells stresses the particular importance of training and drill in the proper use of excellent equipment. He and his associates take what seems to be a pretty "common sense view" of fire-fighting equipment old and new. They invest "work, sweat, thought" in the constant and familiar problem of getting the best equipment possible and keeping it in tip-top shape, while living within a not inexhaustible budget. Any piece of equipment must not only be good, it must be essential . . . and, it follows, carefully maintained . . . and used.

Development Story

To illustrate this attitude, here is the story of how Chief Wells and his staff decided on and have used the self-contained, canister-type breathing apparatus. After a trip to the Fire Department Fire Instructors Conference in 1951, Chief Wells and his assistants decided that enough breathing equipment was not being used in the department, and that what was on hand was not being used properly. They began putting more and more emphasis on adequate training in, and utilization of, masks and other modern fire-fighting and protective equipment.

This led to the firm belief that firemen, when wearing any ordinary masks, cannot give prompt and full attention to fire-fighting and rescue work. They must worry whether there is sufficient oxygen to survive in the atmosphere.

The new oxygen-generating apparatus seemed like an excellent answer to the problem, since it enables firemen to work safely in con-

(Continued on page 78)

inside the trade

A new division to create and conduct special industrial incentive campaigns has been formed by Cappel, MacDonald & Co. of Dayton, Ohio. Under its director, William J. Niederauer of New York City, the new division will design campaigns offering merchandise and travel awards in accident-prevention, absenteeism-reduction and employee suggestion programs. Headquarters for the newly-created division are at 1 East 57th Street, New York City.

Ansul Chemical Company has announced the appointment of Richard Baker as Public Relations Director and Brad Sebstad as Advertising Manager. Baker, formerly Advertising and Sales Promotion Manager, will also serve as a special assistant to Ansul President, Robert C. Hood. Sebstad will be in charge of the company's advertising, sales promotion, publicity and publications programs.

With plans completed to devote the bulk of its resources to the research, development, manufacture, and sale of medical gases, therapy oxygen, and related apparatus, the Ohio Chemical & Surgical Equipment Co. (A Division of Air Reduction Company, Incorporated), has announced the discontinuation of the sale of its line of sterilizers, surgical lights, and operating tables. Arrangements have been made with the American Sterilizer Company to service the discontinued sterilizers, lights and tables. Ohio's own organization will continue servicing for several months until transfer of the function has been completed.

Princeton Paint Laboratories have assigned to John B. Moore Corp. the marketing and manufacturing rights to two new types of corrosion inhibitors, for both ferrous and non-ferrous metals.

Aluminum Company of America distributors are offering a complete line of aluminum sign materials. In conjunction with this new service for customers, Alcoa has announced the appointment of Melvin R. Schuster as Market Supervisor for the sign industry, a new position with the company.

Under the new plan, Alcoa distributors throughout the country can supply sign blanks of various shapes and sizes, complete with aluminum fasteners for proper construction.

A new assembly plant has been opened in Independence, Iowa by Micro Switch of Freeport, Ill., a division of Minneapolis-Honeywell Regulator Co., to expand its production of mercury switches and snap-acting switch products.

W. W. Gilmore, president of the division, said that some new products may be added during 1955 as tooling becomes available.

Mr. Gilmore also announced the establishment of new sales and engineering offices in Phoenix, Charlotte and Denver. The new facilities will be located in Honeywell sales and service offices and will be managed by former Micro Switch division field engineers. Ralph C. Froehlich, formerly of Los Angeles, heads the new Phoenix office; Donald S. Schultz is being transferred from Philadelphia to take charge of the Charlotte office, and Richard J. Petersen, formerly of Minneapolis, is in charge of sales and engineering in the Denver area.

The appointment of W. H. Parkinson as Advertising, Publicity, and Sales Promotion Manager of Quacker Rubber Corporation has been announced by G. A. Dauphinais, Vice President and General Manager.

Mr. Parkinson has had eight years experience in the industrial advertising field, including a year as Assistant Advertising Manager at Quaker Rubber. He will be in charge of advertising, publicity, and sales promotion for both Quaker Rubber Corporation and Quaker Pioneer Rubber Mills, a recent acquisition of H. K. Porter Company.

Oxy-Catalyst, Inc., has opened an office in Los Angeles, Calif., to serve the West Coast. This is the first branch office of the Wayne, Pa. firm, which develops and manufactures catalytic devices for air pollution control and waste heat recovery. The new office is located in the Guaranty Building, 6331 Hollywood Blvd.

Alfred I. Bratton, a catalyst engineer, will be manager of the new branch office.

Pittsburgh Plate Glass Company has announced that it has executed an agreement providing for the purchase of Barreled Sunlight Paint Company with paint-producing plant and headquarters at Providence, Rhode Island. The purchase will not become effective until all stockholders of Barreled Sunlight Paint Company have approved.

According to E. D. Peck, vice-president of Pittsburgh Plate Glass Company, Barreled Sunlight will continue to operate under its own name as a wholly-owned subsidiary of Pittsburgh Plate Glass Company. It will be managed by its present staff headed by Wilbur L. Rice, president. The firm has approximately 150 employees in its sales and manufacturing operations.

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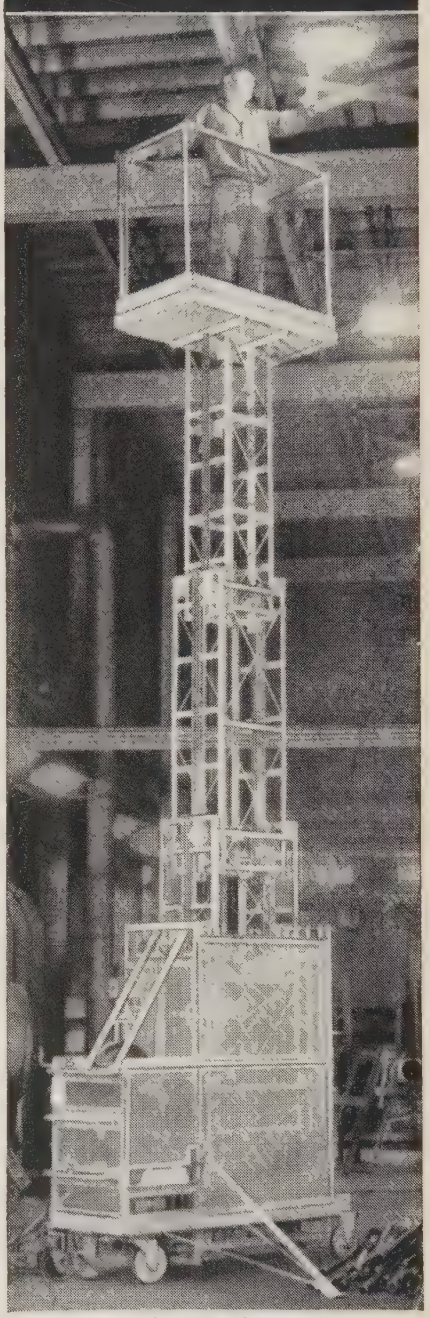
Economy HI-REACH TELESCOPER

ENGINEERED FOR STRENGTH STABILITY AND SAFETY



Safety is our first consideration in building Hi-Reach Telescopers.

During the past quarter of a century of making Hi-Reach Platform Telescopers, our engineers have constantly improved the mechanical construction to obtain maximum stability, smooth time-saving lifting action, and safety.

Standard Models available from 10'-9" to 35 ft. high, and custom-built units as high as 100 ft. if you like.

ECONOMY ENGINEERING CO. EST. 1901
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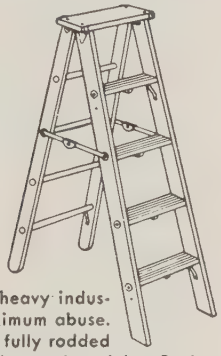
(Use Key # D-40 on Inquiry Card on page 85)

Dayton safety ladders

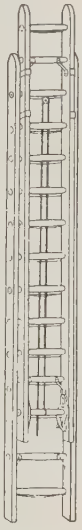
approved and labeled by Underwriters' Laboratories

The accepted standard for ladders, Daytons are built of selected, tested, kiln-dried Sitka Spruce. Designed to latest specifications of the American Standards Association Safety Code.



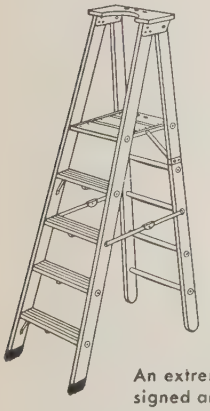
DAYTON Fig. 200

A well constructed step ladder built for heavy industrial use to stand maximum abuse. Can be supplied with fully rodded back for extremely heavy-duty jobs. Bucket rack optional. All hardware zinc-plated. Sizes 4' to 16'.



DAYTON Fig. 102

A strong ladder for general industrial use. Side rails are 1 5/16" x 2 3/4" (rails available 1 3/8" x 3 1/4" if desired).



DAYTON Type-H

An extremely rugged ladder, designed and built to meet demand for a platform ladder with millwright back construction. Tool shelf on top. Ladder shoes standard equipment. Folds absolutely flat for easy storage. Features include pinch-proof spreaders, corrosion-resistant zinc hardware, slip-proof treads. Sizes 4' to 16' to platform.

For FREE literature write Dept. G.

Dayton safety ladder co.

2339 Gilbert Ave., Cincinnati, Ohio

In Canada—SAFETY SUPPLY CO., TORONTO

(Use Key # D-41 on Inquiry Card on page 85)

Methylamines Data Sheet

A NEW SAFETY data sheet on methylamines has been announced by the Manufacturing Chemists' Association. The 20-page folder, part of a continuing series, covers the properties and essential information for safe handling and use of methylamines.

Copies of the folder, SD-57, Methylamines, may be obtained from the MCA, 1625 Eye Street, N. W., Washington 6, D. C., at 25¢ each.

Plumbing Code

A UNIFORM CODE for plumbing has been approved as the country's first true national plumbing standard. After more than 20 years of development, the code is designed to modernize existing practices and to coordinate the work of plumbing equipment manufacturers, architects, contractors, municipal law makers, building officials and others.

The announcement was made jointly by the American Society of Mechanical Engineers and the American Standards Association. The ASME, with the co-sponsorship of the American Public Health Association, provided the administrative leadership in obtaining approval of the code as the American Standard National Plumbing Code.

According to the sponsors, the code may be used by architects and contractors in the design and installation of plumbing equipment, by plumbing equipment manufacturers in the design of their products, and by states and cities as a basis for regulation and ordinances.

The ASA stresses the fact that the code is not mandatory. It is "national" in the sense that it is distinguished from the multiplicity of different codes which have only local recognition and acceptance and that it is supported by a national consensus. It is intended for those municipalities which need it as a basis for setting local standards that are uniform with those used elsewhere in the nation.

In addition to the sponsors, the following organizations were represented as members of the National Plumbing Code Coordinating Committee: U. S. Department of Commerce, American Society of Sanitary Engineering, Building Officials Conference of America, Conference of State Sanitary Engineers, National Association of Plumbing Contractors, Uniform Plumbing Code Committee, and the Western Plumbing Officials Association.

The American Standard National Plumbing Code, 186 pages, is available at $3.50 a copy from: The American Society of Mechanical Engineers, 29 West 39 Street, New York 18, N. Y., and the American Standards Association, 70 East 45 Street, New York 17, N. Y.

Standards Catalog

JUST PUBLISHED is the 1955 edition of "A List of American Standards." The 48-page publication lists and indexes about 1500 American Standards. There are 210 for construction and civil engineering, 153 mechanical, 272 electrical, 158

safety, 165 textiles and wearing apparel, 251 photography and motion pictures, 74 petroleum products, 69 chemical, 62 metallurgy, 38 gas-burning appliances, 32 drawings, letter symbols and abbreviations, 18 mining, 11 rubber, 10 office equipment and supplies, and a miscellany of others.

A separate section on consumer goods contains an index of standards for household appliances and furnishings, wearing apparel, hobby cameras, etc.

Free copies are available from the American Standards Association, 70 East 45 Street, New York 17.

Portable Tool Manual

In view of the recent rapid trend toward mechanization of all hand labor, a new book, "How to Use Portable Power Tools" by Maurice Reid, is designed as an up-to-the-minute manual for the building and construction trades, maintenance crews, industrial production, wood and metal working shops. It describes all types of standard portable electric tools, newly developed machines, and numerous attachments for specialized jobs. Step-by-step instructions on uses and "tricks of the trades" show the craftsman how to turn out more skillful work faster and with less fatigue than by old hand methods. One hundred eighty instructive photographs make this a practical, basic 200-page guide for all manual workers. Library edition published by Thomas Y. Crowell Company, New York City, at $2.95. Unabridged special editions available at $1.50 each by writing Porter-Cable Company, 55 Exchange Street, Syracuse 8, N. Y.

Air Pollution Control Guide for Industry

Recognizing the need for coordinated action to develop control methods of dust, smoke and fumes, commonly referred to as Air Pollution Control, the American Foundrymen's Society, Des Plaines, Illinois, is issuing a booklet, "Control of Emissions from Metal Melting Operations." It was compiled by the AFS Air Pollution Control Committee, working on an industry-wide project. The material deals with the general subject of air pollution and its control, describing the engineering characteristics of the various types of equipment now in actual service for controlling emissions from metal-melting operations. Typical operating data, obtained from installations of several types of equipment are included.

This pamphlet provides foundry management with a guide to the steps necessary for control of air pollution, so that its plant may continue to operate as a "good neighbor," complying with local air pollution ordinances now in effect or, possibly, forthcoming.

Value of the text is enhanced and clarified by practical illustrations, tables and an extensive bibliography. Booklet sells for $1.50 to AFS Members; $2.25 to those who are not members of the Society.

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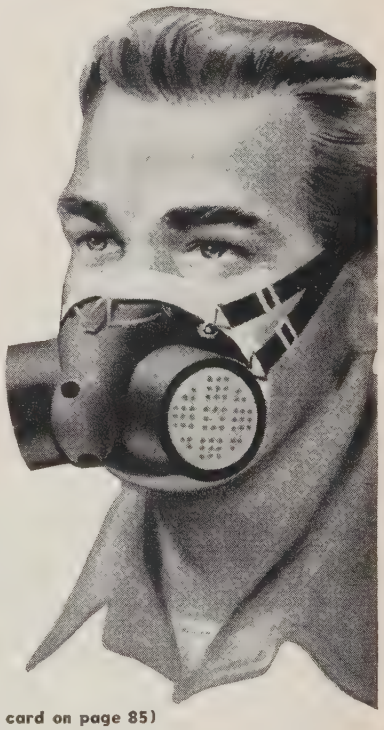
DUPOR No. 10

Chemical Cartridge Respirator

Nearest thing to a gas mask! Double filters guard against nuisance gases, smoke, chemical fumes. Available in Code "A" for inorganic gases; Code "B" for organic vapors; Code "AB" for inorganic and organic use. Supplied with Code "B" cartridges unless otherwise specified. Order sample today, $5.00 postpaid.



H. S. COVER, SOUTH BEND, IND.

"Respirators for Industry since 1894"

(For details, use Key # D-42 on card on page 85)

APPROVED SAFETY
guards for all
DANGEROUS MACHINES
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DUST COLLECTORS
for all dusts
PREVENTS FIRES
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Specialists in the
UNUSUAL
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INDUSTRIAL CENTER

(Use Key # D-43 on Inquiry Card on page 85)

SELF-STICKING SIGNS

A complete line of Self-Sticking Accident Prevention Signs in wordings and sizes recommended by ASA and NSA is now available from the W. H. Brady Co. Stocked in sizes 5"x14", 3¼"x14", 5"x9", 2¼"x9" and 2¼"x4½". Stick to any surface. Are put up fast by unskilled help without nails, screws, tools. Write for 16-page Catalog and free usable samples.

Another Brady product, Self-Sticking Warning Stripes and Warning Checks in rolls, lets you mark hazards fast with either diagonally striped designs or checkerboard designs. Applied right off the roll. Eliminate costly hand painting. Made of self-sticking vinyl plastic, acetate fibre and reflective "Bradylite." Stocked in 3 different color combinations in rolls of various widths and lengths. Write for Bulletin #143-A and free samples.

Manufacturer: W. H. BRADY CO.
749 W. Glendale Ave., Milwaukee 12, Wis.
(Use Key # D-44 on Inquiry Card on page 85)

SAFETY ACHIEVEMENTS

WHAT IS SAID to be a world's record for safety in the heavy electrical industry field is the 5,510,000 man-hours chalked up by the Daystrom Instrument plant at Archbald, Pa. The National Safety Council recently awarded the plant a plaque for its unique achievement.

• • •

THE OUTSTANDING safety performance of 1954 among Dravo Corporation operations was turned in by the Electric Shop at the company's Neville Island Plant. The shop was recently awarded a plaque by the company for its record of 455,731 hours without a disabling injury.

• • •

ALL MANUFACTURING plants and research facilities of Celanese Corporation of America came through 1954 with an accident frequency rate of 1.57 lost-time accidents for every 1,000,000 man-hours worked, which was far below the 1953 national average of 7.44 accidents for all American industry.

The company also made an impressive record in fire prevention by reporting an average fire loss of only $59 last year, contrasted with a national average for general industry of $2,529 in 1953.

The company disclosed that the Narrows, Va., fiber manufacturing plant was the 1954 winner of the Harold Blancke Safety Award in the annual inter-company competition. The plant had only two lost-time accidents in the year, during which time approximately 4,000,000 man-hours were worked. The actual accident frequency rate for the Narrows plant was 0.5.

Certificates of Commendation were won by the Narrows; Bridgewater, Va.; Bishop, Texas; Hopewell, Va.; Linden, N. J.; Summit, N. J. facilities and the Central Trucking Division located at Cumberland, Md., for establishing best safety records on a divisional basis. FOR COMPLETING three million man hours without incurring a disabling injury, the Permacel Tape Corporation, New Brunswick, N. J., was presented with the National Safety Council Award of Honor.

• • •

The company also received a certificate of commendation from the New Jersey Safety Council for achieving the 3,000,000 man-hour record during the period from July 27, 1953 to December 1954.

The award winning accomplishment set by Permacel is a new safety record for the Johnson and Johnson organization, of which Permacel is a subsidiary.

• • •

IN ESTABLISHING a new world's safety record in the sheet metals division as established by the National Safety Council, of 7,312,464 man-hours of manufacturing operations without a lost-time injury, the Bridgeport (Conn.) works of the

Remington Arms Company, Inc., maintained a safe working practices tradition that has played a major role in Remington operations for many years.

All of the four plants owned by Remington Arms Company hold world's safety records within their respective divisions of industry. The Bridgeport works' record was amassed over the period that began November 16, 1953.

At Remington's Ilion (N. Y.) plant, where firearms and industrial tools are made and which is included in the miscellaneous iron and steel products division of industry, a world's safety record was established on November 11, 1954, when a lost-time injury brought to a close accident-free operations which totaled 9,069,485 man-hours.

In the pottery industry of the clay products section, Remington's Findlay (Ohio) plant, where Blue Rock targets and target-throwing traps are manufactured, has been operating more than seventeen years without a lost-time injury.

• • •

Workers of Department 21-13 at the Lockheed-operated government aircraft plant, Marietta, Ga., have not had a disabling accident since October, 1951. Their 173-week perfect record now totals more than two million man-hours of accident-free work.

• • •

Recognition of its safety record has been given the Scottdale, Pa., plant of the Robertshaw-Fulton Controls Co. The plant was recently awarded a plaque by the National Safety Council for 12 months of accident-free operation in the Group C Foundries Division.

• • •

Sylvania electric Products Inc. has been cited by the Occupational Health Institute for providing its employees with "the best kind of constructive health service, aimed at keeping workers well and reducing accidents and disease."

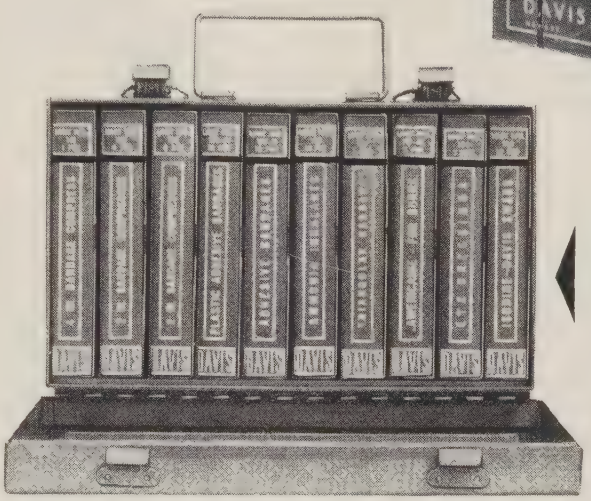
At a recent ceremony a certificate was presented to Sylvania by Dr. Harold Brandaleone of New York City, regional consultant of the Institute.

In accepting the certificate, Dr. Harry E. Tebrock, Sylvania medical director, said, "Credit is due to our employees and particularly to the medical and safety personnel for the excellent part they are taking in seeing that the program is a success."

The Occupational Health Institute, sponsored by industrial management and the medical profession accredits companies whose health practices and programs meet Institute Standards, such as a stated medical policy; preplacement medical examinations; available facilities for voluntary periodic physical examinations for all employees; a competent consulting staff; attention to sanitation, safety precautions and in-

NOW! REDESIGNED DAVIS D-CARTONS IN SEALED, SANITARY WRAP, WITH EASY-TO-OPEN RED PULL TAB!

Just pull the red tab to unwrap.

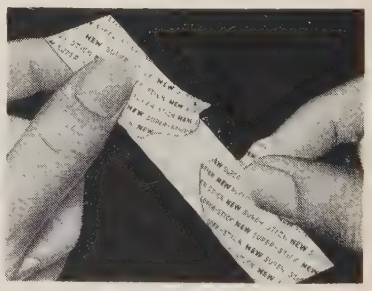


The continuous red line across the face of the D-Carton shows that none of the cartons has been opened.

A break in the red line, as at the third carton in the illustration, signals that they have been opened and should be checked for replacement before the contents have been used up.

BAND-AID
Trade Mark

Plastic Strips with "Super-Stick" now available in Davis D-Cartons and kits when desired with these advantages: (1) a new cushion pad of Red Cross cotton covered with surgical gauze; (2) all four edges of gauze are folded under, free from loose threads, and (3) handy new tab lift, shown at right. Fingers never touch pad.



SAFETY DAVIS DIVISION

DAVIS EMERGENCY EQUIPMENT CO., INC.

64 Halleck St., Newark 4, N. J.

(For details, use Key # D-45 on card on page 85)

dustrial hygiene; well-equipped dispensaries for emergency care as well as periodic medical examinations.

• • •

SAFETY AWARDS emblematic of over two and a half million man-hours without a lost time accident have been presented to the Louisville, Ky. plant of B. F. Goodrich Chemical Company. The plant received the President's Cup which is presented annually to the chemical company's plant compiling the best safety record for the preceding year.

Four other awards were made to the plant by the Louisville Safety Council. A first place plaque was awarded in an inter-plant safety competition including all Louisville companies which employ between 500 and 1000 people. Certificates of merit were presented for completing 1954 with no disabling plant injury and for having no fleet accidents with company vehicles during the year. The Council also tendered an Award of Honor to the plant for having passed the 2½ million man-hour mark with an unblemished safety record.

• • •

FORD MOTOR Company employees made 1954 their safest working year in history, reflecting the effectiveness of intensive efforts, according to John S. Bugas, vice president in charge of industrial relations. The in-plant accident rates dropped last year to record lows of 1.97 for frequency and .28 for severity. Since 1947, Ford has reduced its frequency rate by 81 percent and its severity rate by 65 percent. The company spends millions of dollars annually on safety programs, including more than $5,000,000 to buy protective clothing and equipment for its employees.

• • •

YEAR-END FIGURES show 1954 was one of the safest years in the history of Owens-Illinois Glass Co.

Ten of the firm's 30 plants, warehouses and other installations went through the year with perfect safety records, and the frequency of lost time accidents throughout the company dropped to 2.9 per million man hours from 3.8 in 1953.

• • •

THE EMPLOYEES of the Camden, N. J., plant of Monsanto Chemical Company's Inorganic Chemicals Division have been honored for their all-time company safety record of more than 10 consecutive years without a major injury. A special Executive Committee plaque was presented to the plant, and each employee also received a choice of personal gift awards. The plant is also being awarded a Ten-Year Perfect Safety plaque by its insurance carrier and a certificate of commendation from the National Safety Council.

Powdered Soap

Liquid Soap

EVERY TYPE OF SKIN CLEANSER

Bar Soap

Lightfoot

manufactures all three from raw material to finished product!

A Specialized Soap for Every Type of Plant Requirement!

POWDERED SOAPS

To meet every conceivable industrial need . . . for light, heavy or extra heavy duty, for general plant or office use, or to solve specific cleansing problems.

CHOICE OF BAR SOAPS

- A hard milled soap, extremely economical, especially designed for industrial use.
- An extra mild soap for dry or sensitive skins.
- A hexachlorophene product for those departments requiring this type of soap.

LIQUID SOAP

Furnishes profuse lather; will not irritate or dry the skin. Shipped in non-returnable containers.

QUALITY with ECONOMY

Because Lightfoot manufactures its basic soap from raw material to finished product, you have the assurance of constant, uninterrupted supply of uniform quality, plus a "price right" sales policy.

PROMPT DELIVERIES

Stock warehouses in key cities fill orders immediately upon receipt.

DEPENDABILITY

For more than 40 years, America's leading plants have accepted the name "Lightfoot" on a cleansing product as a symbol of efficiency and dependability.

TECHNICAL COOPERATION

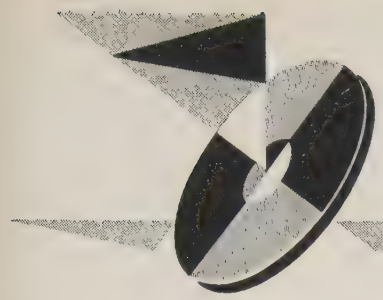
Lightfoot Advisory Service aids on cleansing problems of all kinds, and has saved substantial sums for many customers.

Your inquiries will receive prompt and intelligent attention

LIGHTFOOT SCHULTZ COMPANY

380 MADISON AVENUE NEW YORK 17, N. Y.

(For details, use Key # D-46 on card on page 85)



transportation safety

LOADING DOCK SHIELD

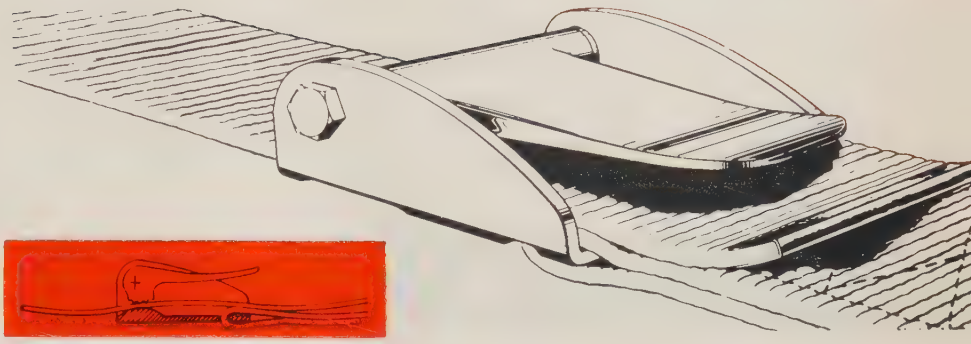
FROMMELT INDUSTRIES have developed a sturdy, metal and canvas, collapsible door hood designed to make any railway or truck loading dock draft free and virtually weatherproof.

The design was originated particularly to help handlers of food perishables to conform with the U. S. Pure Food Regulations pertaining to constant cold temperature maintenance.

Loading dock shields are custom designed to fit standard size rail or truck dock doors regardless of slight dimension variances, and an optional bottom cover is available if full 4-side protection is desired. The shield holds taut when extended

by means of high tension springs and folds flat out of the way, assuring full railroad or truck clearance requirements, when not in use. Loading dock shields are fire, water, and mildew resistant and the material is Underwriters Laboratories Approved.

For detailed information use Key # TS-13 on free inquiry card on page 85.



FOR SAFER MOTORING . . .

FASTEN YOUR SAFETY BELT!

IT HAS BEEN ESTIMATED that one person is killed every 14 minutes in this country's highway slaughterhouse and that another person is injured every 15 seconds! What is being done about it?

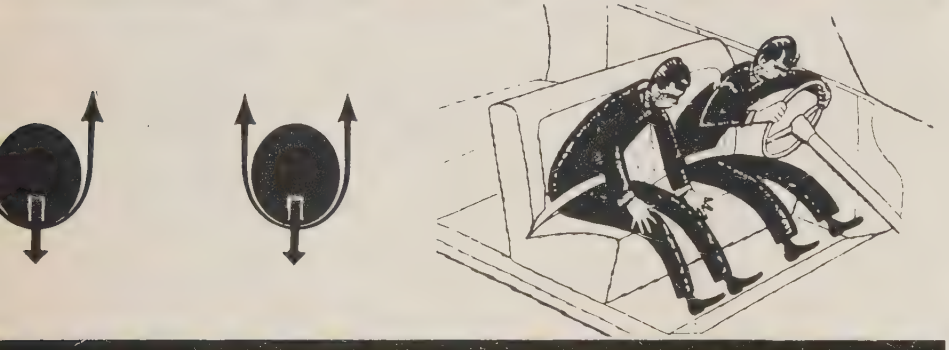
Safety authorities and public officials have proposed several long range programs for controlling the mass murder on our highways, such as public education, stricter enforcement, better roads, stiffer penalties, safer vehicles and lighting equipment, etc. All these measures, however, will take time, and it is more than evident that what we need is immediate protection against highway deaths and injuries.

One device that has received increasing attention is the safety belt for passengers, similar to those used in aircraft. Seat belts will not prevent accidents, but there is strong evidence that they can reduce the death and injury toll. Police in Indiana studied 130 fatal highway accidents in which 153 people were killed and 220 vehicles were involved, and attempted to determine in each accident whether a suitable body-restraining device would have given the victims a better chance of surviving the crash. They found that if a restraining device such as a seat belt had been used, 69 percent of those killed would have survived and another 12 percent might have lived. Only 19 percent were listed as hopeless.

The purpose of the seat belt is to prevent occupants from hurtling forward into the instrument panel or through the windshield or being flung through the doors when the vehicle comes to a crash stop. Engineers at the Cornell Aeronautical Laboratory, Inc., after several years of research, including test crashes with dummies to represent passengers, are in agreement that the seat belt offers a bright ray of hope in the accident picture. Several companies are now manufacturing and marketing seat belts. While the Cornell Aeronautical Laboratory, Inc., a self-sustaining and non-profit affiliate of Cornell University, has recommended the use of seat belts for passenger protection, it has also drawn up a code of minimum requirements for the design, construction and installation of seat belts,

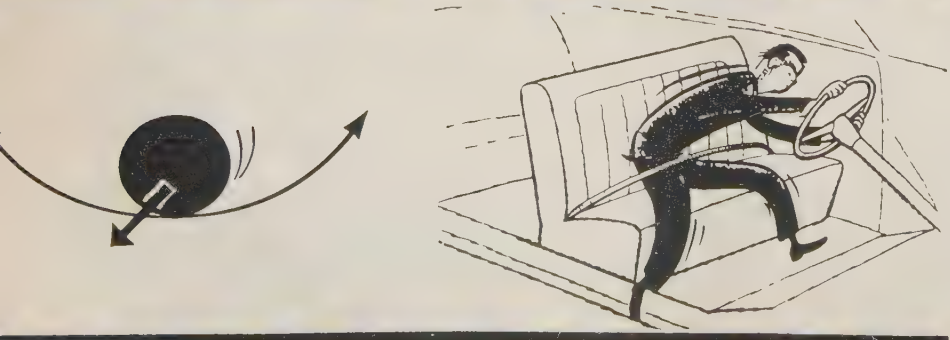
Purpose of seat belts is to prevent automobile's occupants from hurtling forward into windshield or instrument panel or being thrown out door when car comes to crash stop, a serious hazard in any accident or near accident.

Belt too narrow; cuts and hurts. Belt too wide; folds and hurts. Proper width; spreads the load.



Low stress and good sideward restraint. Individual belts give best protection.

High stress and poor sideward restraint. Car-wide belt makes two a "crowd."



Car-wide belt gives little side support. Possible jolt away from steering wheel.

based on their research into vehicle crashes.

It is not the intention of the Laboratory to test, approve or endorse the seat belts made by any company. Rather, the code is designed as an aid to the manufacturers and the public so that certain standards can be met to make the seat belt an effective means of protection. The following recommendations are from the Laboratory findings.

The Webbing

The belt itself should not be too weak, too wide, too narrow, or too slippery. The tensile breaking strength should be at least 1500 pounds. To assure this strength even after the belt has been used for a period of time, an initial or new tensile strength of 2250 pounds is suggested.

The web fabric should be tough enough to resist normal wear and deterioration. Although not the strongest of known fibers, a tight weave cotton webbing of about ⅛ inch thickness has been found satisfactory and the relative coarseness of the belt offers good slip resistance to fittings.

The belt should be wide enough to distribute the pressure and not cut into the body, but also narrow enough so that the edges do not fold over. Belts about 2 inches wide are about right, while 4-inch widths are too wide.

The Buckle

The belt and buckle must work together in harmony. The belt is of no value if the buckle gives way or permits the webbing to slip when less than 1500 pounds of tensile load are applied. That is why the webbing must not be too slippery, and also why the buckle must be designed to hold without slipping. Yet the buckle should be designed for quick, easy threading. Complicated buckles that can be threaded in several ways or require considerable time will only discourage drivers and passengers from using the belts. The

types of buckles used on most airplane belts today are excellent for autos. They are simple, sturdy and foolproof; tension on the belt closes the buckle more tightly. The webbing of aircraft belts, however, is not necessarily suitable for ground vehicles.

Another requisite of a good buckle is that it be easy to release. In many vehicle accidents it may be necessary for the occupants to escape as quickly as possible from overturned vehicles. For example, the wearer, hanging upside down in the vehicle, should be able to release the buckle easily with one hand. Some buckles have been found to lock after being subjected to pressure loads, making it impossible to release them manually. Others require the pressure load to be removed before they can be released.

How Many Belts?

There should be a seat belt for each occupant of the vehicle. If two or three persons are held by a single belt across their laps, they are likely to be jolted against each other in a crash. Or if one person is using a car-wide belt, he can be thrown sideways in an accident.

Any fittings or "hardware" on the belt must also meet the minimum strength requirements of 1500 pounds tensile load. Stitching to attach fittings has proved to be a potential weak spot in the overall strength of many belts. Stitches must be properly patterned and made with a strong thread such as nylon. A recommended pattern has the stitching zig-zag across the webbing diagonally. Cementing of mating webbing surfaces prior to stitching will greatly increase the strength at any joint, making the stitching much less critical.

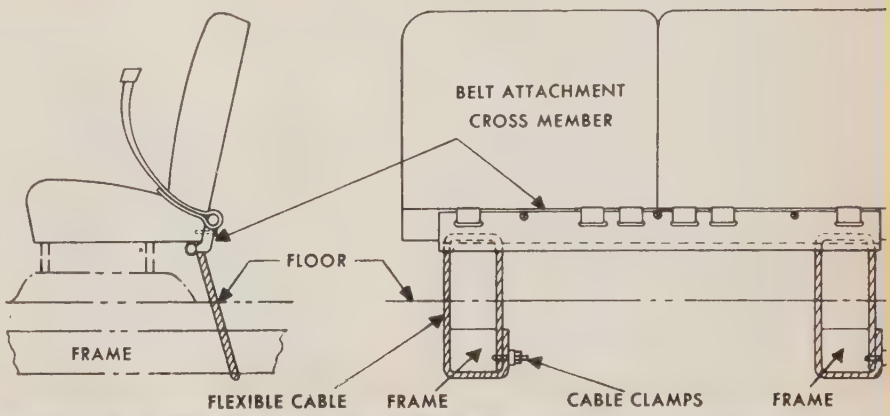
The Installation

A seat belt may meet all the strength requirements but be so poorly installed that the belt is of little value. A belt's anchorage must meet the strength requirement of holding a 3000 pound loop load. There are several satisfactory methods of attaching the belts to the car, but ultimately the load must be taken to the strongest anchorage possible, the frame of the vehicle. When installed, the belt should be at an angle over the lap of 30 to 60 degrees from the floor and should not restrict normal seat adjustment.

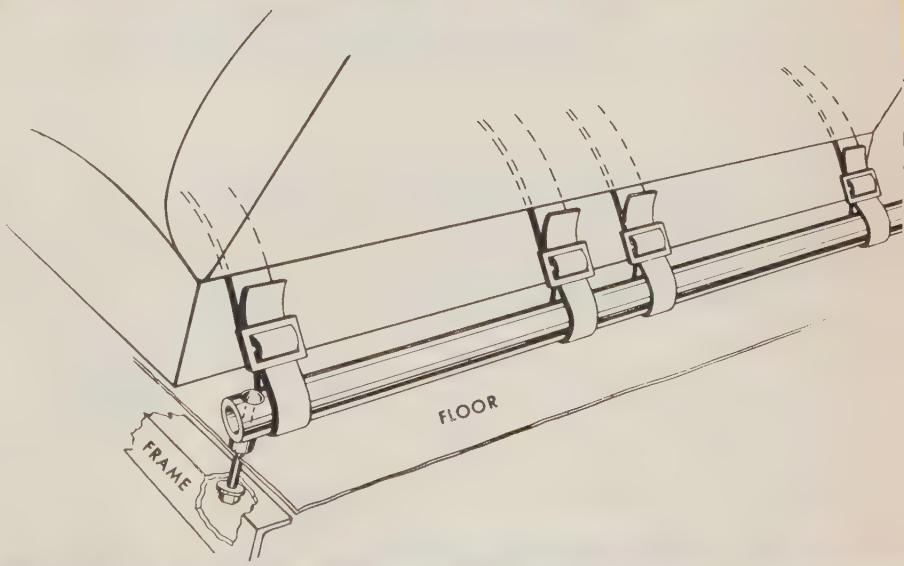
Direct to Frame

Where practical, attachments should be made directly to the frame of the vehicle. In any case, the full load of all belts simultaneously applied should be carried eventually to the frame of the car without causing permanent deformation of any intermediate load carrying member. Several seat belt kits call for attachment to the vehicle floor. However, floors are of thin sheet steel and corrosion on the underside can be rapid, especially in northern states where calcium chloride is used. Large washers or other reinforcements are sometimes used to prevent pulling of the attachment through the thin steel, but even with these there is likely to be floor deformation in a crash. A bar or steel cables may be used as intermediate connectors, but their

With seat belts for each occupant of a vehicle, with wide enough webbing, with a safe, yet easily unfastenable buckle, and careful attachment of belts to the car frame, many lives can be saved from the auto death toll.



One type of seat belt installation takes the "pull" eventually to the car frame.



Another method of connecting the belts to the frame. The bar must be strong.

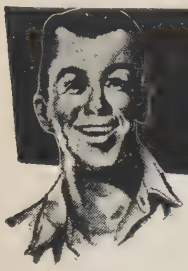
ultimate anchorage to the vehicle frame is recommended.

Seat belts should NEVER be secured just to the seat. Most seats are not strongly attached to the floor and tear loose even in minor crashes. With the seat belt attached only to the seat, both the seat and occupant may be hurled from the vehicle and with the added weight of the seat, the resulting blows to the human body may be more severe than if no seat belt were used.

How Strong the Installation?

Finally, there is the question of how strong the whole installation should be. At first thought, it would appear that the stronger the belt installation the better and safer it should be. However, there are practical limits to the strength needed. When vehicle crashes reach a certain severity, the car structure will collapse and there is obviously little practical value in having seat belts that can withstand the forces that would be encountered in such crashes. The requirements of the Cornell Aeronautical Laboratory, Inc. have been set up on the basis that the seat belt should hold a 200-pound man in position by a belt loop force of 3000 pounds. The Laboratory has set up testing procedures for the benefit of engineers and manufacturers in testing their own products. The seat belt buyer would do well, according to the Laboratory, to demand that his seat belt salesman produce evidence that the requirements as set forth have been met.

Pictures by courtesy of Cornell Aeronautical Laboratory, Inc.



I KNOW I'M SAFE... with WOODEN SOLES!

They Insulate

They are Puncture Proof

One costly FOOT ACCIDENT could have paid for 1000 PAIRS of WOODEN SOLES

Reece has a shoe or sandal to fit your needs.

Write Today for Complete Catalog

No. 504-S—Heatproof
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There is no substitute for Reece Wooden Soles

REECE WOODEN SOLE SHOE CO.

Dept. SM 4-55 Columbus, Nebraska

(For details, use Key # D-48 on card on page 85)

For LONGER LIFE GREATER STRENGTH

Seal Brand, kiln dried, hickory handles and mallets are made for rough, tough, hard use. There's greater strength, less breakage with Seal Brands. Perfectly made and balanced. Wide selection of sizes. Order through your jobber salesman.

For Extra Safety always specify Seal Brand . . . Handles and Mallets.

LA PIERRE-SAWYER HANDLE COMPANY Jackson, Missouri

(For details, use Key # D-49 on card on page 85)

Ice, Fire, and Smoke

(Continued from page 68)

taminated or oxygen-deficient atmospheres. Experience with the first piece of apparatus substantiated this and more were ordered. Chief Wells was also pleased to note that the all important factor of maintenance was practically solved in this mask. Used canisters are discarded and new ones inserted, if necessary right at the scene . . . in a matter of seconds.

With the new equipment on hand, the department's men underwent a series of classes on masks, beginning with the proper method of putting on a mask or taking it off, the care a mask must have to be dependable "when the chips are down," the handling of fire-fighting equipment while wearing masks, etc. But this was just the start; the Fargo fire-fighters spent many hours in practice with masks too, under carefully simulated fire conditions, in the gas chamber and at training blazes.

When the test came . . . in the form of an actual fire . . . the men were ready, and so was their equipment . . . to overcome smoke and ice . . . as well as fire.

Pictures by courtesy of Mine Safety Appliances Company.

Material appearing in this section is published as information for our readers and is not intended to imply endorsement or guarantee by SAFETY MAINTENANCE.

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE & PRODUCTION

CLEAR ALKYD VARNISH

(Use Key # 853 on Inquiry Card on page 85)

AN EXTRA PALE clear alkyd resin varnish that may be used on wood, metal, and linoleum, for either interior or exterior surfaces, has been developed by the paint division of the Pittsburgh Plate Glass Co. Resistant to scrubbing and abrasion, the new varnish dries in 2½ to 3 hours and surfaces coated with it can be put into service after 12 hours.

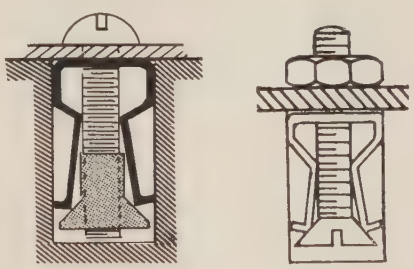
To be known as Waterspar Varnish Extra Pale Clear, the new product's particular advantage is for use where a minimum of discoloring is desirable, either new or after aging. As a linoleum or linowall coating it offers protection without discoloring delicate patterns. The new product is said to be free-flowing and easily applied by brush. It may also be used as a sealer on plywood, knotty pine paneling and other wood surfaces by thinning with mineral spirits.

OVERLOAD SAFETY SWITCH

(Use Key # 854 on Inquiry Card on page 85)

PURPOSE OF the new Dyna-Switch, made by W. C. Dillon & Co., Inc., is to prevent overload damage to costly hoisting equipment by automatically cutting out lifting power whenever the safety maximum is exceeded. This is done by means of a massive U-shaped bar of high grade tool steel, heat treated to flex millions of cycles without losing its resiliency. Attached between the load and the hoist, it trips a sensitive micro-switch whenever the bar is deflected beyond its pre-set operating point, thereby breaking the lifting circuit.

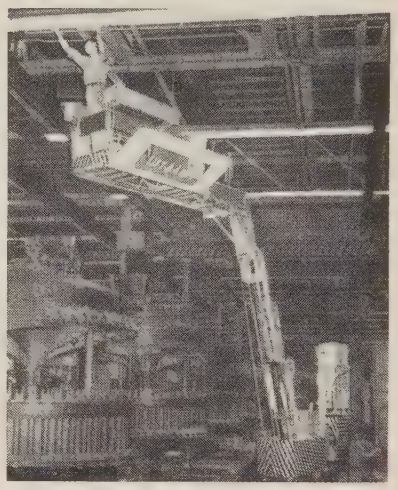
Accuracy of the new 20,000-lb. capacity model is within ½ of 1%, with a safety factor of 3½ to 1. This safety factor is managed by a free-riding stop bolt at the open end of the U-shaped bar. This bolt restrains the bar against deflecting more than 21,000 lbs. even though much greater loads are imposed. Lifting eyes of the Dyna-Switch are electrically welded in position. Dimensions of this compact instrument are only 18¼" long x 6¼" wide x 2⅝" deep and with a net weight of 20½ pounds. For 110 or 220/440 volt power supply.



DUAL EXPANSION ANCHOR

(Use Key # 855 on Inquiry Card on page 85)

THE WYEM DUAL Expansion Anchors can be used with concrete, brick, hollow tile, cinder block, marble, plastics, glass, wood, metal and similar materials. They are used in industrial, commercial and domestic fields by electricians, plumbers, millwrights, repairmen, etc. The anchors are simple to install, and require no setting tool. They are rustproof and resist corrosion, have excellent gripping power because of their design and construction, and withstand sudden shock and vibration. They can be used at any depth of hole and made to hold at any point, even where the hole is drilled too deep or too wide. Available in all sizes to fit standard machine screws, they will not distort and can be used over again.



OVERHEAD MAINTENANCE LIFT

(Use Key # 856 on Inquiry Card on page 85)

DESIGNED FOR fast, efficient handling of overhead maintenance jobs, the Model 19-6 "Lift-A-Loft" (with a 19' 6" platform height) permits one man to reach points as high as 25 feet over the floor and up to 16 feet in front of the unit. The operator rides this battery-powered platform lift truck to the job location, then using push buttons, quickly raises the platform to the lights, piping, girders or other overhead maintenance problems. Up to 500 lb. loads are safety carried on the platform, permitting replacement parts, cleaning materials and other equipment to be carried aloft with the operator.

Use of the unit for washing and group replacement of overhead lights permits continued production work at machines. In some factories, the regular vacuum cleaning of overhead structures with the "Lift-A-Loft" has helped to reduce fire insurance rates. The model 19-6 has an overall height in traveling position of 7' 3"; overall width 35". A day's supply of washing water is carried in the ballast tank and can be pumped to washing tanks on the platform to make the unit completely self-sufficient. Available from Mitchell Maintenance Co., Inc.

AIR-SUPPLIED MASK

(Use Key # 857 on Inquiry Card on page 85)

A NEWLY-DESIGNED mask which supplies fire fighters and industrial workers with oxygen or air, as desired, has been announced by Mine Safety Appliances Co. The MSA Mask is available in two models, the Air-Mask and the O_2-Mask. Either combines a supply of air or oxygen with a demand regulator to provide 30 minutes service in highly toxic or oxygen-deficient atmospheres.

A backmounted cylinder, supported by a lightweight metal frame, is held by nylon harness to the wearer's body. The entire mask weighs only 30 pounds. The new mask can be put in operation in only a few moments. After donning the mask, the wearer simply opens the cylinder valve, adjusts the facepiece, and breathes normally.

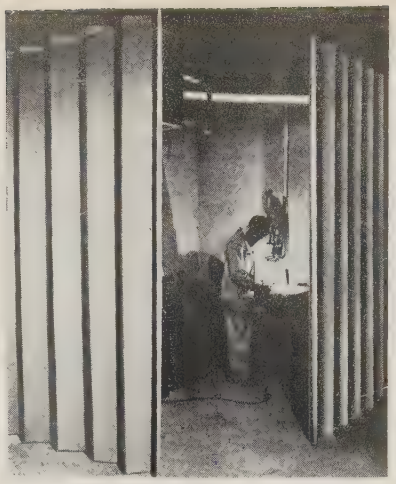
SAFETY FLOOR WAX

(Use Key # 858 on Inquiry Card on page 85)

A NEW SAFETY floor wax containing "Ludox" colloidal silica, which standard testing methods indicate is a highly effective slip-retardant substance, is being introduced by Du Pont.

According to the manufacturer, the anti-slip ingredient, developed in Du Pont laboratories, has for several years been used by floor wax manufacturers as the safety factor in industrial and institutional waxes. Entry of "Ludox" fortified waxes into the consumer field has been delayed by the cost of the material. However, a recent Du Pont survey which revealed that 68 per cent of the people interviewed would be willing to pay a higher price for a good, skid-resistant wax prompted that Company to trial market it in 5 metropolitan areas.

It is said that colloidal silica not only adds safer footing, but also hardens the wax film. Some slip-retardant materials softened or produced tacky films. The extremely small particles of colloidal silica—each about one two-millionths of an inch in diameter—surround the much larger wax particles. As the foot presses on the wax floor, the hard particles are pushed into the softer wax. Energy is absorbed at the point of impact, creating a snubbing action. The Du Pont self-polishing wax is said to be water repellent and suitable for linoleum, asphalt tile, rubber tile, vinyl tile, wood, etc.



FLAME-RESISTANT SOUND-REFLECTING SCREEN

(Use Key # 859 on Inquiry Card on page 85)

A NEW PRODUCT called TransWall, a lightweight, retractable sound barrier curtain, designed especially for industrial applications, is announced by Bemis Bro. Bag Co. The screen is made of a flame-resistive and sound-reflecting material known as "Bemisorb," a specially treated and coated burlap, developed to reduce critical factory noise level at its source. Designed and engineered for individual applications, TransWalls can be installed anywhere in a factory to isolate machine and production noise, and in areas that are potential fire hazards or otherwise dangerous to employees, such as welding operations.

The curtains consist of 7-inch panel folds, chain-spaced to prevent complete extension, and supported by steel top plates that operate on nylon wheels in an enclosed track. They are available in several tones of decorator colors for factories and offices. The curtain is easily adjustable when the need for more space is required, or when one production area must be changed.

POWERFUL PORTABLE VACUUM

(Use Key # 860 on Inquiry Card on page 85)

A POWERFUL, low-priced, wet-dry industrial vacuum cleaner, the E-200 has just been announced by Multi-Clean Products, Inc. It can be used for such heavy volume jobs as cleaning out elevator pits, freight cars and bulk storage areas, or for ordinary building maintenance or for cleaning delicate switchboard wiring systems.

The unit features a maximum 45-inch water lift and 18-gauge steel tank with a capacity of 10-gallons wet or 1¼ bushels dry. It is said to be ideal for all jobs from the heaviest volume wet-or-dry pickups to the lightest vacuuming or blowing. The manufacturer points out that it will pick up water, cleaning solutions, liquid spillage, dirt, lint, scraps of foreign material. And it will spray paints and insecticides or blow dirt and dust out of inaccessible places such as motors, machines, stock bins, etc.

The E-200 is equipped with a Universal type AC-DC, 115 volt, 600 watt motor, a long-life precision ball bearing power unit permanently sealed, and 30-foot, 18 gauge 3 conductor cable with built-in strain reliever. A full range of attachments is available, including special tools for cleaning walls, ceilings, overhead pipes and other hard-to-reach areas.

HEAT RESISTANT HOOD

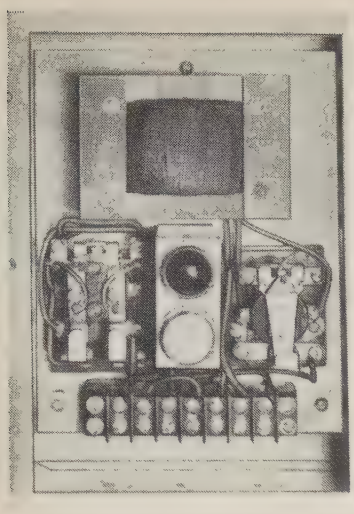
(Use Key # 861 on Inquiry Card on page 85)

A NEW lightweight protective hood made of "Fyre-Armor," the aluminized flame and heat resistant fabric, has just been introduced as the latest firefighter's weapon against radiant heat temperatures as high as 2500° F.

The hood features high-heat resistant eyeglasses, complete freedom of movement and certified protection against radiant heat.

Spacious enough to permit the wearing of standard breathing equipment or a smoke mask, the hood, which covers the head, chest, shoulders and back, is constructed to be worn over a standard hard hat.

"Fyre-Armor" is the recently developed heat and flame resistant fabric made with various metallic layers and an outside coating of aluminum foil. It is also available in firefighting suits, rescue blankets, industrial aprons, mittens, leggings and boots.



ELEVATOR SAFETY DEVICE

(Use Key # 862 on Inquiry Card on page 85)

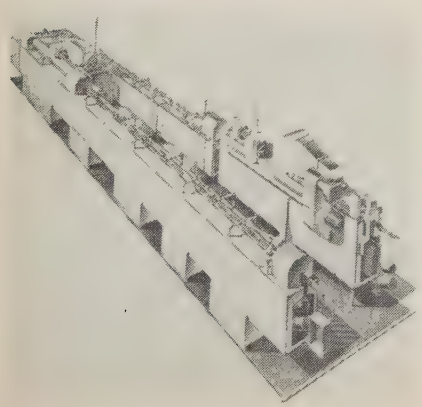
TO PREVENT elevator overloading, this equipment, which is easily mounted on the elevator cab, signals when predetermined load is reached and, when cab is overloaded, it electronically prevents movement of the elevator and automatically resets when overload is removed. It has been field tested for many months, and is equally effective on new or existing passenger or freight elevators. Manufactured by Thompson Elevator & Electric Co., it is available as a packaged unit with all material furnished for the average installation.

ENCLOSED PICKLING MACHINE

(Use Key # 863 on Inquiry Card on page 85)

THE HYDRO-HERMETIC Seal which protects the conveyor against corrosive fumes on the spray cleaning and pickling machines of the R. C. Mahon Co. seals the top of the machine throughout its entire length. Parts are carried through the machine on an overhead conveyor equipped with special corrosion-resistant adapters. The seal prevents the escape of active chemical fumes and reduces the requirements for elaborate ventilating systems usually required in pickling operations.

The tanks and tunnel are of mild steel, lined with lead or rubber or employing monel metal where corrosive materials or fumes are present. The machines permit efficient and thorough preparation of parts for later processing.

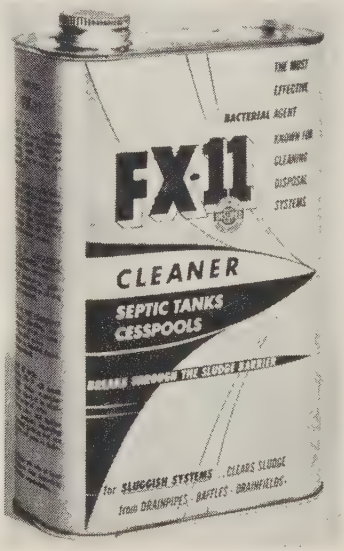


FIRE HOSE PROTECTOR

(Use Key # 864 on Inquiry Card on page 85)

A NEW mildew-resisting, waterproofing material, developed by The B. F. Goodrich Company Industrial Products Division and applied to fire hose jackets, resists moisture absorption and mildew attack. Hose treated with "Superseal" will also help fire fighters in below-freezing temperatures. The water-repellant action maintains hose flexibility in weather conditions that freezes the covers of conventional hose. Improved water repellancy also means a significant reduction in weight at any temperature, since long lengths of water soaked hose are hard to handle.

The Superseal treatment is available in all sizes of fire hose used by municipal fire departments, in industry, institutions, forestry and military use. Covers so treated are light brown in color and have a drier "feel" than some gummy water-repellant agents. The improved treatment will be offered at no increase in cost over standard charges for treated hose.

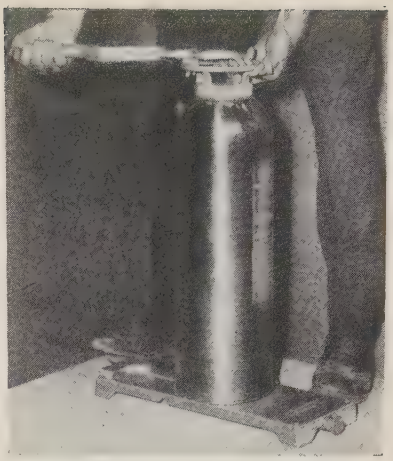


BACTERIAL CLEANER FOR SEPTIC TANKS

(Use Key # 865 on Inquiry Card on page 85)

A NEW BACTERIAL development for sluggish septic tanks and cesspools has been announced by The FX-Lab Company. The new product, Formula FX-11, employs heavy concentrations of micro-organisms in liquid form, designed to digest and break through the sludge barriers that are obstructing the toilet flow of organic waste to disposal systems.

A sluggish system can be restored if the product is used at the first sign of backup, bubble, or slow drain off. The accelerated bacterial action clears pipes, baffles and cesspool sidewalls, and gradually liquefies undigested particles that are clogging the drainfield soil pores. Formula FX-11 contains no harmful chemical ingredients, and is said to be safe to handle, non-corrosive and not harmful to the pipes, construction of the septic tank or cesspool, or the necessary bacteria within. One quart is used for each 500 gallons capacity. It is poured into the toilet bowl and flushed.



EXTINGUISHER SERVICING DEVICE

(Use Key # 866 on Inquiry Card on page 85)

A NEW FIRE extinguisher servicing device for removing extinguisher heads safely and quickly, has been introduced by the Central Safety Equipment Co. The product, named the "Extinguisher Servicing Device," has been designed for use by industrial and commercial firms maintaining extinguishers and extinguisher servicing organizations. It enables one man to remove an extinguisher head easily.

The device consists of a stainless steel impact wrench and adjustable aluminum gripper base. To remove the "head," the extinguisher is placed on the gripper base and locked into position by a foot controlled "brake," adjustable for 1½ and 2½ gallon extinguishers. The impact wrench is then applied. Through a loose, swinging action in the handle, impact for jarring loose the head is achieved, without damage to the extinguisher, head-threads or operator.

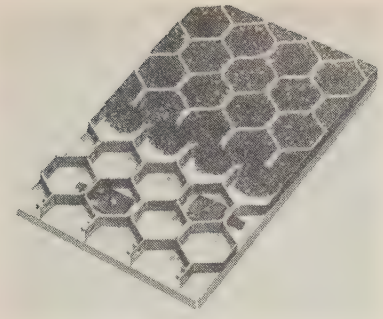
WATERPROOF MASONRY PAINT

(Use Key # 867 on Inquiry Card on page 85)

THE PROBLEM of a wet basement, leaking silo or seeping elevator pit can be controlled with Waterfoil, a new ready-mixed cement-base paint designed to prevent water seepage. The paint, produced by the A. C. Horn Division of Sun Chemical Corp., can be applied to a wet or dry wall without the need to saturate the surface with water before and after application.

The addition of a complex combination of self-hydrating agents known as KB-55 renders Waterfoil self-curing. Through chemical interaction, the coating cures into a stone-like water barrier which permits breathing of the underlying masonry but does not allow the passage of water. It is claimed that it can withstand hydrostatic pressure of 500 lbs. per square foot. It can be applied with an ordinary white wash brush and dries within eight to ten hours.

The product is non-toxic, and is available in five colors: white, gray, green, rose and buff. Available in one-gallon cans and also in four-gallon cans, the latter including a kit containing a free applicator brush and a sample of "Plug and Seal," a hydraulic cement for filling up holes in basement walls.



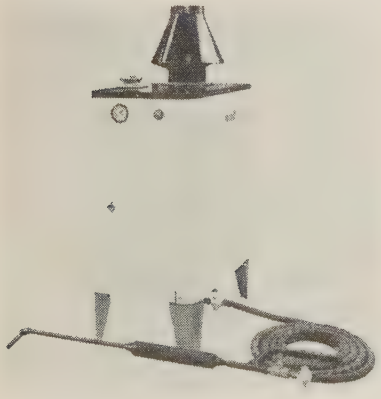
STEEL FLOOR ARMOR

(Use Key # 868 on Inquiry Card on page 85)

ANNOUNCEMENT OF a "New Hexteel" safety floor armor that has less weight per square foot and a greater exposed steel surface has been made by the Klemp Metal Grating Corp. Designed as a heavy-duty floor to withstand abnormal wear and rough usage, the new ⅜" x 16 gage (.065) hexagonal steel grating has a weight of 1.7 pounds per square foot. The grating, filled with a hot or cold mastic, is ideal for resurfacing ramps, garages, factory aisles, parking areas, runways, loading docks, depots, traffic surfaces, institutions, meat packing and food processing plants, chemical plants and wherever rough usage decreases the lasting durability of the surface area or flooring.

It can also be used as a steel armor in new concrete floor installation, or in conjunction with a mastic fill on existing concrete or wood floors.

Hexteel forms a continuous steel floor armor which eliminates cracking, swelling, warping and shrinking. These armored floors are said to be impervious to wheels of any size and are designed to take the brunt of rolling loads. The panels are easily installed. Sides and ends are easily locked together on the job site to form a continuous grating. One quick method of anchoring the floor armor is by means of powder-actuated tools.



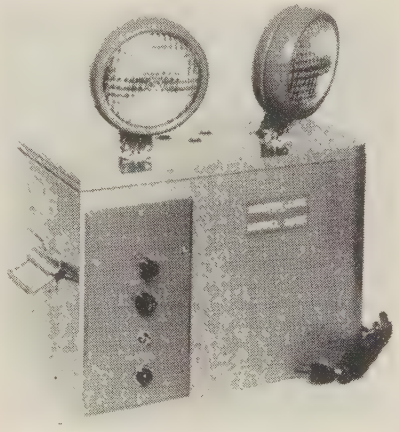
SMALL STEAM CLEANER

(Use Key # 869 on Inquiry Card on page 85)

A NEW, SMALL steam cleaner is now available from Malsbary Mfg. Co. The baby Model 60 is capable of handling the cleaning work of most small garages and service stations, restaurants, bakeries, candy shops, supermarkets, meat markets, small slaughterhouses, small factories, canneries, kennels, and veterinarians. It is powerful enough to cut and wash away grease and dirt, sterilize, disinfect, deodorize, and to melt snow and ice.

The unit works directly off regular water main where water pressure is 60 pounds or greater, reaches working temperatures in two to three minutes, delivers 60 gallons of hot solution (325° F. inside coils) hourly at 50 p.s.i. and up. The operator controls operation at the nozzle. When valve at cleaning nozzle is shut, the burner automatically shuts off; comes on again the instant nozzle-control valve is opened. A safety vacuum breaker on incoming water line prevents solution from backing up into fresh water supply. If water line is accidentally broken or water flow cut off, burner automatically shuts off, thus preventing coils from burning out.

Malsbary Model 60 is 17" wide, 26½" long and 52" high, and uses liquid detergent, which feeds direct from detergent tank to water entering the heating coils. Strength of the cleaning solution is determined by setting a solution metering valve. For areas where water main pressure is below 60 pounds, a booster pump assembly is available.



AUTOMATIC EMERGENCY LIGHT

(Use Key # 870 on Inquiry Card on page 85)

THE COMPLETELY new Sentry-Lite is designed to provide instant automatic emergency light over large areas, if power is interrupted for any reason. Panic, injury to personnel, possible sabotage, spoilage of goods in process, costly work stoppage can be prevented before they occur.

The unit features an automatic recharger operating on standard electrical power to keep battery up to peak capacity at all times. The test panel on the front includes a momentary switch for test as to function, an A. C. fuse, a toggle switch to cut off light to conserve power in extended power failure, and a pilot indicator light indicating unit is functioning.

The total weight is 50 lbs., including battery, which provides more than 12 hours of continuous operation. Unit is topped by two 5000 candle power sealed beam lamps. More lamps may be added and choice of flood or spot lights is available. Made by Hobby & Brown Electronic Corp.

NEW SAFER SOLVENT

(Use Key # 871 on Inquiry Card on page 85)

A SOLVENT that is said to be non-flammable and ten times less toxic than carbon tetrachloride is announced by Flamort Chemical Co. The manufacturer states that the solvent properties of X-Sol, which contains inhibited 1,1,1-Trichloroethane, closely parallel those of carbon tet.

The solvent can be used for removing wax, grease, oil and tars. For metal cleaning, it is especially suitable for cold cleaning, dip-cleaning and bucket-cleaning operations, but is not recommended for vapor degreasing. It does not corrode aluminum or aluminum alloys under ordinary conditions. It can also be used for cold-process dry cleaning of fabrics.

PORTABLE LADDER STAND

(Use Key # 872 on Inquiry Card on page 85)

A NEW MOBILE ladder-truck, specially designed to help cut costs in the maintenance zone between 7 and 14 feet, is now available. New features are said to save maintenance personnel time and allow them to work more efficiently and safely. With an overall height of 78", length of 42" and width of 26", the Safe-Lad mobile ladder-truck is easily rolled to the job—on standard elevators or through regular doorways. The sturdy base tray provides storage space for necessary tools or supplies.

As operator places his foot on first step the two swivel casters (other two are fixed) are automatically retracted, allowing front end to rest solidly on two rubber-tipped steel legs. After job is finished, a reset lever places the ladder back on all four wheels. A lightweight metal auxiliary platform may be bolted to top step to increase platform height to 84". An adjustable height guard rail surrounds the platform area on three sides. A sliding tray on guard rail provides a handy work space.

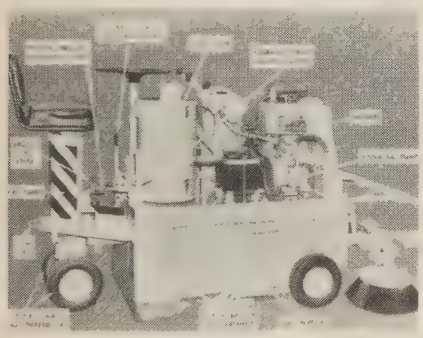
The Safe-Lad is fabricated with steel and strongly arc welded. Steps are diamond tread plate steel. In addition to the standard model, a special "overhang" model has a counterbalanced platform extending 24", thus enabling maintenance work directly over counters or shelving.

UNIVERSAL SAFETY HAT

(Use Key # 873 on Inquiry Card on page 85)

WELSH-GUARD Plastiglass Safety Hat provides protection, style and comfort. Particularly effective in guarding against falling objects, electrical shock and dripping fluids. Has strength to exceed impact of 40 foot lbs. Gives insulation protection against shock through high dielectric properties. Resilient material is moisture proof and will not crack or break. Reduces inventory problem by universal cradle, which adapts one hat to all sizes. Cradle suspension of crown provides maximum shock absorption. Space between cradle and crown gives air-conditioned comfort.

Hat available in brown; other colors on special request. Style 1150 has broad brim around entire hat. Style 1155 is modified with brim only in front. Web chin strap, winter liners, and extra leatherette cradles are available from Welsh Mfg. Co.



MOTORIZED SWEEPER

(Use Key # 874 on Inquiry Card on page 85)

A HEAVY-DUTY truck-mounted industrial sweeper suitable for both inside and yard operations is announced by the Industrial Sweeper Co. Called the "Hydra-Sweep," the unit has the driver's seat located high at the back for full visibility and control. It is driven by hydraulic power at the dual rear wheels. Hand levers adjust the full-floating pick-up brush and also the two side-front brushes. The latter brushes permit sweeping close to walls, columns, etc. The dirt hopper is also power operated and rear wheel steering allows sharp turns.

Although higher speeds are possible, the unit can travel at a speed of up to 6 M.P.H., permitting coverage of 150,000 square feet in an hour. The broom speed remains constant, regardless of travel speed. The sweeping width can be adjusted from 30 to 61 inches. Overall dimensions are 89 inches long, 56 high and 40 wide. The unit can be used for towing shop trucks as well as sweeping.

NEW TRAFFICONE FLASHER

(Use Key # 875 on Inquiry Card on page 85)

TO MAKE the Trafficone System as efficient at night as in daylight, its manufacturer, the Davis Emergency Equipment Co., Inc., has developed a special flasher light to fit any size Trafficone. The flasher can be bought separately, for installation on present units, or it is available already attached to a Trafficone.

Clearly visible, even beyond the reach of car headlights, the flashing red or amber light will run continuously for two days, or intermittently up to a full week. It operates from a standard six volt battery. It is completely weatherproof, and is built to operate in rain and snow storms.

COMFORT STANDING MAT

(Use Key # 876 on Inquiry Card on page 85)

THE AMERICAN Floor Products Co. now offers a new industrial and commercial floor matting designed to reduce employee fatigue and injury. The product is called Neo-Sponge comfort mat and is made through a special patented process of blowing millions of inert nitrogen bubbles into Dupont's Neoprene.

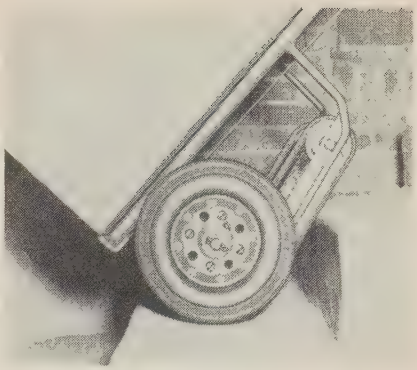
Its outstanding properties are: permanent resilience, high electrical resistance (61,000 volts before puncture), and an almost impervious resistance to acid, oil, grease and heat. The mat is said to outwear similar products made of rubber. It is especially suited to any type of business where employees stand at their jobs. The molded tread design on both sides makes it reversible and offers excellent non-slip foot traction. Available in two thicknesses, ¼" and ⅜", and in standard sizes up to 36" wide x 10' long. Larger sizes can be supplied upon request.

STAIR-CLIMBING TRUCK

(Use Key # 877 on Inquiry Card on page 85)

A NEW LINE of hand trucks, equipped with non-mar and easier operating stair glides, has been announced by Nutting Truck and Caster Co. Their glide assemblies are equipped with rubberized fabric V-belts which cannot damage in any manner stairs having finished surfaces. For less effort going up or down, the glide assemblies are positioned to permit a smooth movement parallel to slope of curbs or stairs, rather than the intermittent raising and lowering of the load as with conventional glides.

These two-wheeled trucks handle cases, crates, cartons, kegs, bags, drums and



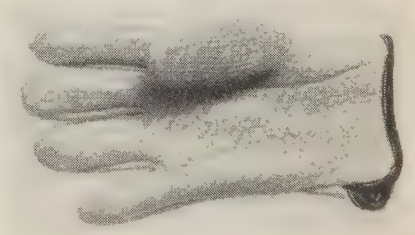
barrels. Of electrically welded tubular steel with choice of single or double handles, and open or solid plate noses in 5", 7" or 9" lengths. Frame size—14" x 47" high with choice of 6" or 10" roller bearing, semi-pneumatic rubber tired wheels for both outdoor and indoor use.

ODORLESS SOLVENT

(Use Key # 878 on Inquiry Card on page 85)

A NEW, odorless solvent was developed recently by The Penetone Company. Known as TPC SOLVENT, it is intended as an odorless replacement for solvents such as kerosene and mineral spirits which give off odors and fumes that are obnoxious to many people. The solvent has a high flashpoint of 130 F., which compares favorably with the 105 F. of mineral spirits. It has a maximum allowable concentration of 1000 ppm. so that the toxicity problem is practically non-existent. It was not designed as a replacement for carbon tetrachloride and should not be confused with the so-called "safety solvents."

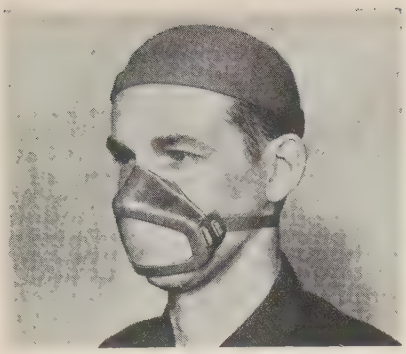
The most important uses for TPC SOLVENT are as a tank degreaser and for manual cleaning on work bench or production lines. In these applications, it is used at room temperatures for removal of greases, oils, asphalt, etc. It may be used safely on all metals and insulation equipment. It leaves no residue.



COATED TERRY GLOVES

(Use Key # 879 on Inquiry Card on page 85)

AS A GENERAL heavy-duty work glove, the Keller Glove Mfg. Co. is marketing a terry-cloth fabric glove coated with plastic. The resulting rough surface provides a good grip in handing oily or wet materials. The plastic coating also resists cutting and abrasion from sharp or rough objects for long wear. The loop construction of the fabric provides cushioning comfort for the wearer and insulates the hand while protecting it.



LIGHTWEIGHT PAINT MASK

(Use Key # 880 on Inquiry Card on page 85)

THE NEW "Flex-A-Prene" Paint Mask, recently developed by Flexo Products, Inc., provides convenient low cost protection for spray paint operators. It keeps out paint pigments and solvents with amazing efficiency, according to the makers, and is extremely comfortable to wear, and easy to talk and breathe through. The new Paint Mask weighs only one ounce and can be worn with goggles or spectacles.

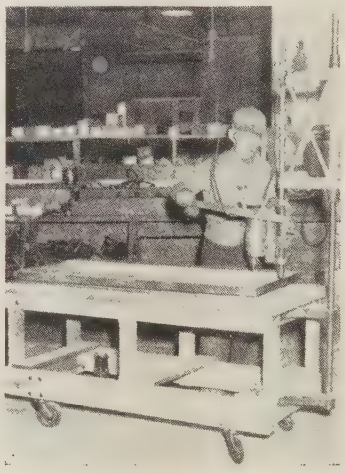
An entirely new filter material, "Prenex," is utilized. "Prenex" is not affected by paint pigments or solvents and won't clog, soften, swell or jell . . . even after hundreds of hours of exposure. This filter is said to last much longer than conventional paint mask filters and cuts down on costly lost production hours because less frequent filter replacements are required. The mask is a safety device which workers will willingly wear because of its comfortable, lightweight construction.

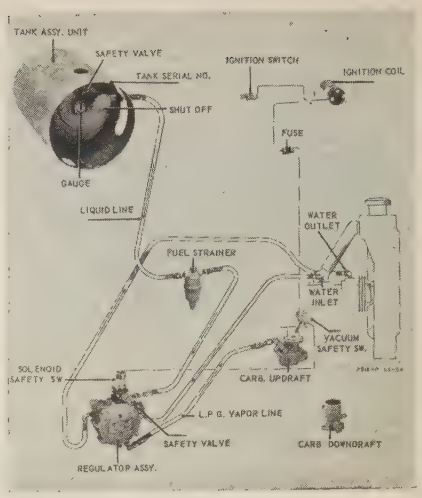
WORK BENCH TRUCKS

(Use Key # 881 on Inquiry Card on page 85)

USE OF elevated platform trucks as "work benches" saves time, labor and employee fatigue, according to the manufacturer, Nutting Truck & Caster Co. Parts and fabricated structures requiring drilling, punching and similar operations are kept mobile and at comfortable, "work height" level.

Elevated platform trucks can be furnished in any required height and size for mounting drills, saws, shears, grinders and other bench-size machine tools. Running gears consist of 4 ball bearing swivel casters for easy mobility in any direction or of 2 casters on one end with axle mounted main wheels opposite; choice of wheels include Roller Bearing, Demountable Rubber Tired or Semi-Steel in wide range of sizes.





LP-GAS CONVERSION KITS FOR FORK TRUCKS

(Use Key # 882 on Inquiry Card on page 85)

CLARK Equipment Company has announced that users of gas-powered Clark fork trucks can now have their machines adapted to liquefied petroleum gas power through installation of a conversion kit recently made available to its dealers. The kits include the same components used in LP-Gas production models built at Clark's factory with Underwriters Laboratories approval. Items furnished with the kit are individually UL-approved. Conversions can now be made on Clark's standard Clipper, Carloader, Yardlift 40 and Utilitruc model fork trucks. Kits for other models will be available soon.

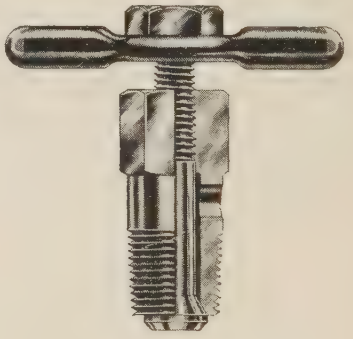
What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the opposite page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it on the Inquiry Card.

Key Number	Subject
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti Fogging Equipment
104	Sweatbands
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
111	Safety Toe Shoes
112	Safety Boots
113	Wooden Sole Shoes
114	Anti-Slip Soles
115	Oil-Proof Soles
116	Welding Helmets
117	Welding Curtains
118	Protective Skin Creams
119	Skin Cleansers & Soaps
121	Sanitary Drinking Cups
122	Athlete's Foot Control
123	Salt Tablets
124	Noise Control
125	Antiseptic Medication
126	Burn Medication
127	First Aid Kits & Supplies
128	Stretchers & Litters
129	Resuscitators

Key Number	Subject
130	Portable Ventilators
131	Dust & Fume Collectors
132	Carbon Monoxide Control
133	Fire Extinguishers
134	Safety Cans
134A	Extinguishing Ash Trays
136	Alarms & Warning Lights
137	Safer Solvents
138	Flammable Liquid Pumps
139	Explosion-Proof Lights
140	Electrical Insulation Testers
141	Anti-Slip Flooring & Steps
142	Anti-Slip Waxes & Finishes
143	Floor Cleaning Products
144	Floor Machine Equipment
145	Oil & Grease Absorbents
146	Paints
147	Ladders & Safety Devices
148	Scaffolds
149	Work Platforms
150	Fluorescent Lamp Guards
151	Machine Guards
152	Power Press Feeders
153	Safety Signs
154	Aisle Marking Equipment
155	Safety Awards & Emblems
156	Employee Safety Guide
157	Hand Tools



VERSATILE VALVE

(Use Key # 883 on Inquiry Card on page 85)

THE NEW stainless steel Graloc vent-drain-bleeder valve, in sizes ½" and ¾", has been designed for 20,000 psi safe working pressure or temperatures up to 1200°F. A pressure-aided seat makes it leakproof for oil, water, gas or steam service. It is fabricated from a combination of types 410 and 416 stainless steel, making it suitable for essentially any fluid or atmosphere, and providing a maximum resistance to galling.

It may be used for vents and drains at the high and low points of piping, equipment and instruments, to bleed at double block valves, and as freeze drains, trycocks and sample connections. With its universal application, it provides a means of reducing maintenance stocks.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

MISCELLANEOUS

Wire Rope Assemblies 246
Macwhyte Co. This 24-page catalog describes, illustrates, and gives full specifications on a wide variety of wire rope fittings to be used for slings and hoists and as parts of machinery or equipment. Included are eyes, ring eyes, studs, sleeves, hooks, forks and wire rope.

Materials Handling Problems ... 247
Towmotor Corp. A magazine type of bulletin offers documentary photo-stories that outline materials handling problem in various types of industries and show how they were solved.

Engine Safety Crank 248
Safety Crank Co. Illustrated 4-page bulletin describes a manual crank that is designed to eliminate accidents in cranking any type of internal combustion engine.

Arc Welding Methods 249
Hobart Brothers Co. A 16-page booklet of interesting photographs and articles on welding, many of which feature time-and-money saving applications.

Dustless Blast Cleaning 250
Baldwin-Hall Co. A 4-page technical bulletin describes a new non-metallic, dustless mineral shot for blast cleaning. Physical and chemical details are given and photographs show performance on typical castings.

Store Accident Prevention 251
Scott Paper Co. An attractive and helpful booklet gives tips on preventing accidents in grocery stores. Emphasis is on good housekeeping and handling of materials. Features a safety check list to help manager find and remove store hazards.

PERSONAL PROTECTION

Neoprene Soles and Heels 252
Quabaug Rubber Co. A concise 8-page booklet describes and pictures four types of neoprene soles that are particularly suitable for industrial shoes, because of their resistance to heat, oil and chemicals and their slip-resistance characteristics.

Industrial Safety Equipment 253
Willson Products, Inc. A new, easy-to-read, 64-page general catalog is divided into four major sections: eye, head, respiratory, and welding protection. Illustrations, descriptions and ordering information are correlated for simplicity and practicality. Serves as a valuable and interesting reference book.

Heat Resistant Gloves 254
Mine Safety Appliances Co. An illustrated bulletin gives basic data on various styles of heat-resistant leather gloves for use in foundries, heat treating, welding, etc. Describes two types of leather: for 500 and 800 degrees F.

Narrow Front Welding Helmets.. 255
Jackson Products, Inc. Two types of helmets made from fiber-glass plastic in a narrow-front style are described and illustrated in this bulletin: fixed front and lift front designs. Information on broad front styles and parts lists are included.

Orlon & Dynel Work Clothes 256
Worklon, Inc. This new catalog gives full data on various styles and characteristics of work clothes made from Orlon or Dynel, which offer resistance to deterioration by acids and chemicals. Charts show resistance of materials to specific chemicals.

Leather Gloves and Clothing 257
Wicx-Merit Glove Co. A concise catalog describes and pictures various kinds of safety clothing made from leather. Included are welding gloves and mitts, jackets, overalls, aprons, bibs, sleeves, railroader's gloves and mitts, and general heavy- and light-duty work gloves.

Window Cleaner's Belts 258
Whitner-Chicago Co. This well-illustrated 4-page folder shows in detail a complete set of safety devices for window cleaners: safety belts, shoulder straps, nylon rope with manganese bronze terminals, etc., and various window anchors for installation in wood and metal.

High Leather Shoe 259
Hy-Test Safety Shoes. This bulletin gives construction details on a new high leather shoe for linemen, loggers, miners and other outdoor workers. In addition to safety toes, the shoe features water-proofing, double leather at wear points, steel shank, dacron stitching.

Safety Shoe Chart 260
Record Industrial Co. This brochure can be unfolded for use as a display chart showing various styles of safety shoes. Used in company shoe stores or on bulletin boards, it will assist workers in selecting shoe styles and also make them aware of the attractiveness of modern safety shoes.

NOISE CONTROL

Sound Analyzer 261
Hermon Hosmer Scott, Inc. Data sheet on a portable sound analyzer that separates complex noise, sound and vibration signals into their component frequency bands. Includes detailed specifications for the instrument.

Sound Absorbers 262
Elof Hansson, Inc. Illustrated bulletin describes easily installed portable sound absorbing devices that can be used in noisy areas to decrease the sound level. Bulletin shows the box-like devices suspended from the ceiling in a machine tool area.

MEDICAL AND HYGIENE

First Aid Kits 263
Pac-Kit Co. This illustrated 4-page bulletin describing unit-type first aid kits features equipment suitable for aircraft, buses, trucks

(Continued on next page)

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April, 1955

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and other vehicles. Also shown are kits for various types and sizes of industries, for individuals and small groups and for specialized hazards such as snake bites.

Electronic Towels 264
Electronic Towel Corp. How the "electronic" hot air hand drier can save washroom costs, how it differs from other electric hand driers, and how it reduces fire hazards and can be plugged into an ordinary electric outlet are outlined in this illustrated 8-page brochure.

Impregnated Salt Tablets 265
U. S. Safety Service Co. A bulletin that shows how salt tablets combat heat fatigue encountered by workers in high-temperature occupations or during hot weather. Bulletin emphasizes the impregnation process which permits the tablet to dissolve slowly to prevent nausea.

Smoke Photometer 266
Phoenix Precision Instrument Co. This 8-page bulletin gives specifications and full data on a self-contained instrument for measuring the concentrations of smoke, dust, fume, etc. particles in the atmosphere. Listed uses include air pollution studies, filter research, fan and air conditioning testing, medical research, etc.

FLOOR MAINTENANCE

Maintenance System 267
U. S. Sanitary Specialties Corp. This brochure discusses the time and material cost saving and safety factors of a system of floor maintenance for all types of floors. System features a spray method of applying cleaning solutions.

Floor Absorbents 268
Bridgeport Sawdust & Shavings Co., Inc. This bulletin describes two types of floor absorbents for the control of oil, water and grease spills. One type features rapid absorption, and the other maximum saturation capacity.

ELECTRICAL EQUIPMENT

Conductor System 269
Insul-8-Corp. This 28-page catalog describes enclosed conductor systems for the safe electrification of cranes and monorails without special engineering. Catalog includes parts list, engineering data and full description of standard and special installations.

Overhead Busway for Business Machines 270
Feedrail Corp. This bulletin describes a 60-ampere overhead trolley busway electrification system suitable for bringing power to business machines that often are rearranged as volume and type of work change. Bulletin outlines flexibility of system and lowering of rewiring and maintenance costs.

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CESCO

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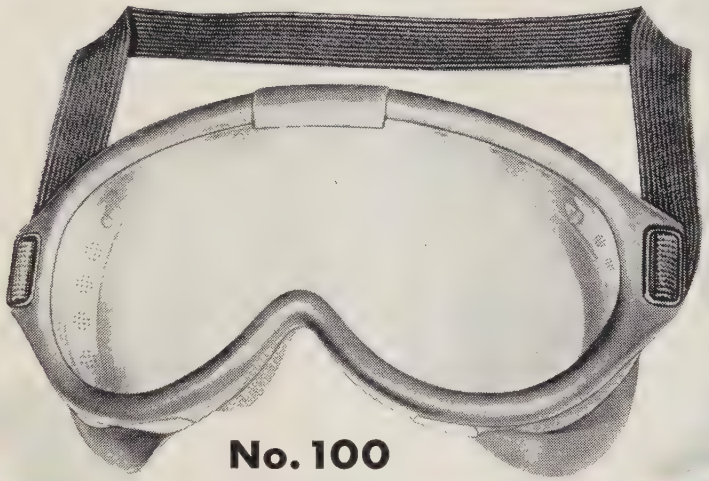
before your Eyes!

NEW
Chemical Goggles



No. 100
CESCO

When anyone must work in dusty air, or near splashing liquids, the new light-weight CESCO No. 100 Chemical Goggles are a must. They are comfortable to wear because they are moulded from black synthetic rubber and have wide, soft contact surfaces. Because they are perfectly contoured and fit snugly all around, they leave no open spaces, they provide complete protection. The elastic headband is easy to adjust.

The transparent plastic window is so wide that it permits full view. It is fitted into deep holding grooves, yet can be replaced in a few seconds. Fogging is prevented by baffled ventilator holes on each side. The No. 100 Chemical Goggles fit perfectly over most glasses.

• Ask your CESCO safety equipment distributor to show you this new goggle and the many other goggles in the complete CESCO line.

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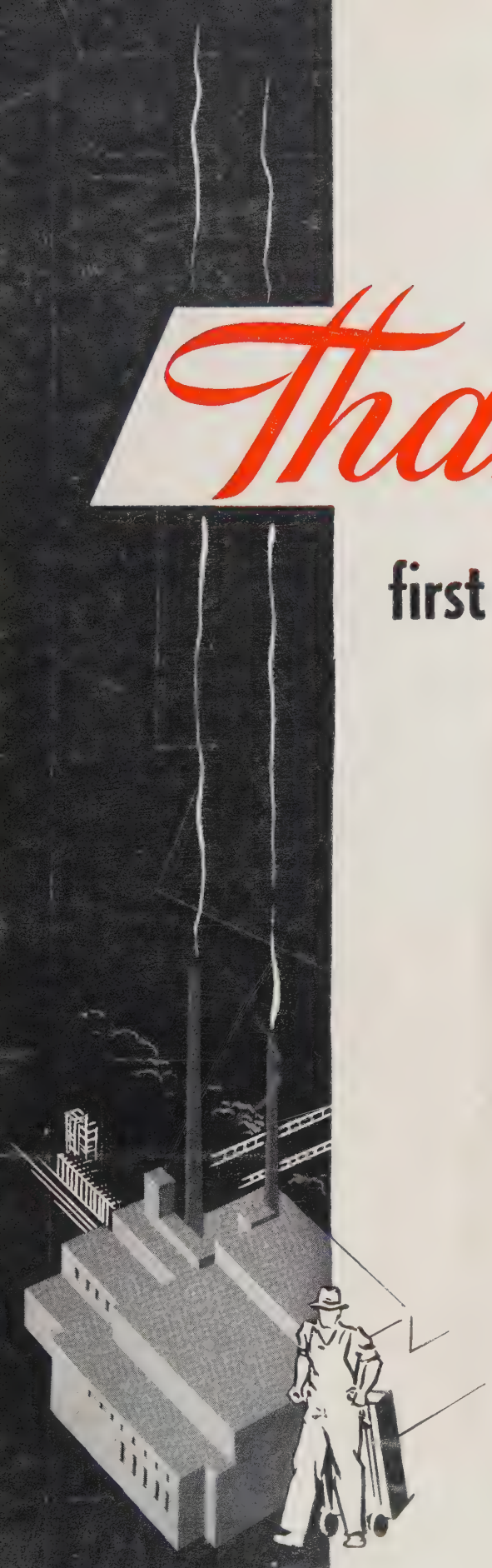
CESCO

CESCO FOR SAFETY

(For details, use Key # D-1 on card on page 85)



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first aid for throat irritations

SORE THROATS due to coughs and colds, if neglected, may result in lost man hours of work.

THANTIS® Lozenges contain no antibiotic; they produce no unpleasant by-reactions in the mouth.

THANTIS Lozenges relieve pain promptly—reduce infection—act prophylactically.

Twenty-three years' extensive clinical and lay use has proved the safety and effectiveness of this popular product.

® Reg. U. S. Pat. Off.

Mercurochrome®

First aid for wounds . . .

Neglect may cause infection which can be prevented by prompt use of 'Mercurochrome.'®

No antiseptic has been proved to be more effective than 'Mercurochrome' for topical application.

HYNSON, WESTCOTT & DUNNING, INC., BALTIMORE 1, MARYLAND

(For details, use Key # D-51 on card on page 85)

Safety Maintenance and Production

EST. 1901 AMERICA'S PIONEER MAGAZINE IN ITS FIELD

MAY, 193

All-Plastic Goggles

NOW...AO† INTRODUCES TWO LIGHTWEIGHT SPECTACLE GOGGLES WITH COMPLETE INTERCHANGE OF LENSES AND TEMPLES!

Illustrated are Nos. 786 and 787 — two of the latest and lightest AO All-Plastic Lens Goggles, with noncorrosive endpieces and metal skull temples. In the field of lightweight eyecare they show the same benefits of applied engineering as AO's goggles for heavier exposures.

Lenses, endpieces, and temples can be easily replaced or assembled. One-piece lenses of either clear or green acetate have high impact resistance. Replacement is simple — just slide off the endpieces and reassemble. No. 786 is ideal for use over regular spectacles for temporary or "on and off" wear. Model 787 is identical except that it has side shields for added protection against laterally flying particles.

Recommended Uses

(1) For light grinding, light machining, spot welding, woodworking, yard work where dust hazards exist, and for protecting Ry Safety Glasses or regular glasses.

(2) For plant visitors and others who may be exposed to eye hazards for short periods.

Keep an adequate supply of these goggles (and extra lenses) on hand always for good fitting. Check with your nearest AO Safety Products Representative.

For hot weather, hot job comfort . . . keep production up with AO Sweatbands.

American Optical
SAFETY PRODUCTS DIVISION

†T.M., Reg. by American Optical Company

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

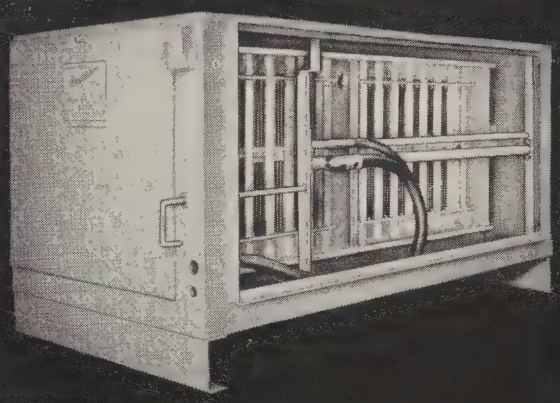
(For details, use Key # E-1 on card on page 77)

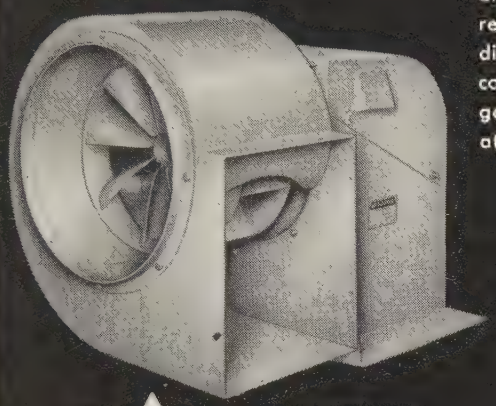
Fact:

Westinghouse Air Handling Provides Effective Control of Airborne Hazards

PC PRECIPITRON® ▶

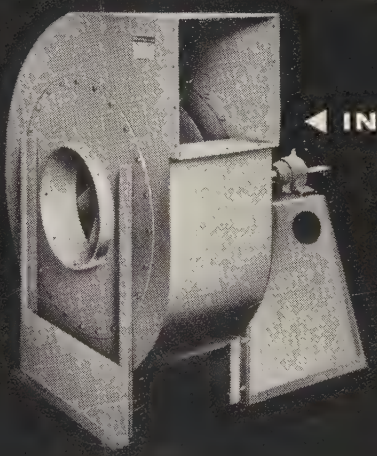
Cabinet-type electronic air cleaner—only 38" in direction of air flow—removes 90% of all dirt, dust, smoke, oil coolant mist—even germs—from atmospheric air.





▲ VENTILATING SETS

Compact, direct-connected, or belt driven for indoor or outdoor installation . . . for fume exhaust, ventilating toilets, stockrooms, locker rooms, and cafeteria kitchens. Readily available!



◀ INDUSTRIAL FANS

Rugged, efficient fans available on short delivery. Exhaust foul air, smoke, gases, fumes, metal dust, chips, shavings—even long, stringy materials. Three types of wheels.

Where health, safety and comfort require putting air to work properly, Westinghouse offers you a complete line of air moving and air cleaning equipment.

Compact and efficient, all Westinghouse units are designed to give long, trouble-free service. And you have the assurance that all parts are made by one manufacturer—one warranty—an exclusive Westinghouse-Sturtevant feature.

MORE FACTS . . . ? Call your nearest Westinghouse-Sturtevant Sales Engineer, he's the "Man with the Facts" . . . or fill in the handy coupon below.

WESTINGHOUSE AIR HANDLING

YOU CAN BE SURE . . . IF IT'S

Westinghouse

J-80443

Westinghouse Electric Corporation
Sturtevant Division, Dept. 18D
Hyde Park, Boston 36, Mass.

Please send more facts on Westinghouse Air Handling Equipment.

NAME AND TITLE . . . . . .

COMPANY . . . . . .

CITY . . . . . STATE . . . . . .

(For details, use Key # E-2 on card on page 77)

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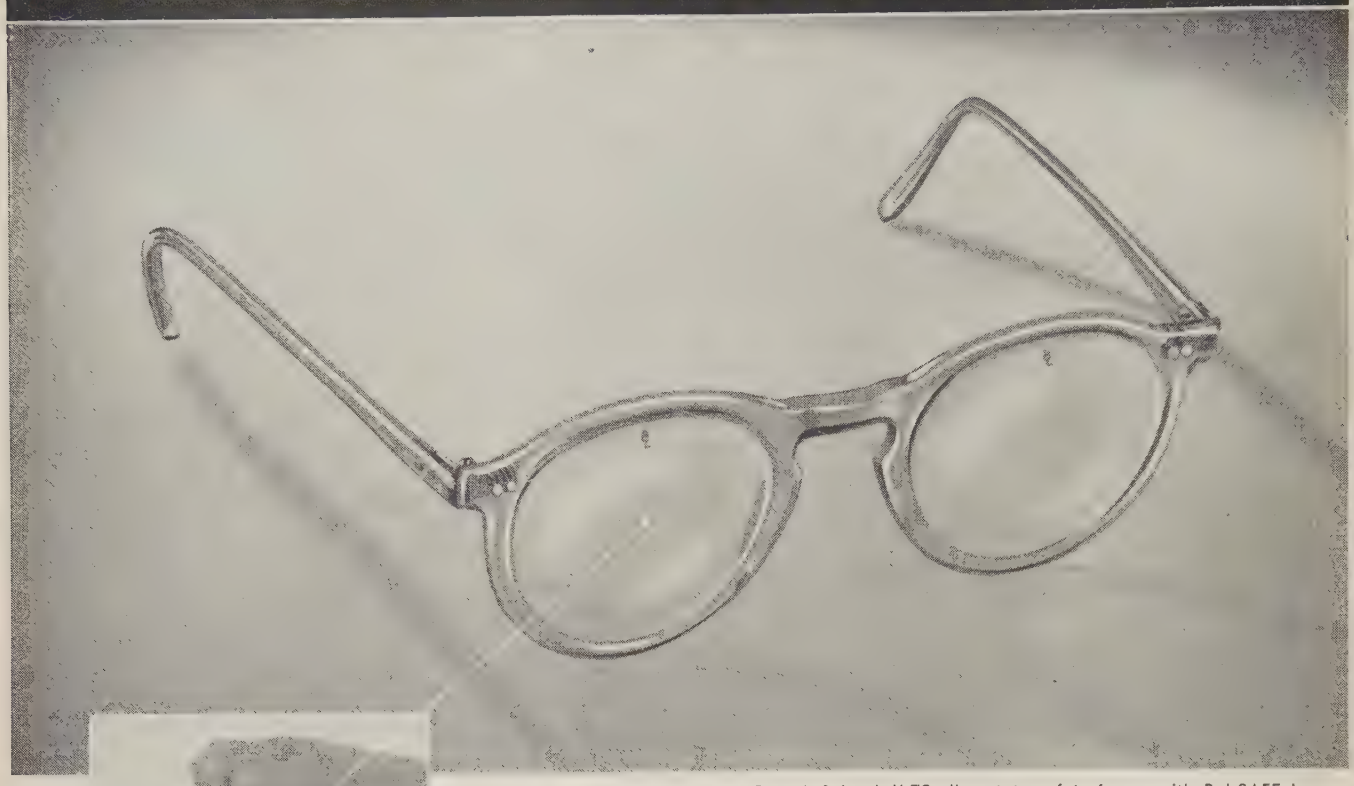
SAFETY LENS QUALITY IS NEVER A LUXURY



Bausch & Lomb Y-70 all-acetate safety frame with Bal-SAFE lenses.

So workers see better! Bal-SAFE industrial lenses are finished to the same critical standards as regular corrective lenses.

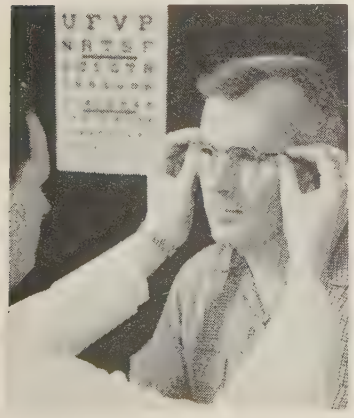
Bausch & Lomb glass technology insures an **EXTRA** margin of safety in Bal-**SAFE** lenses

For eye protection the lens is the thing. It may stand between a worker's precious vision—and tragic, eternal blackout.

You provide the finest protection science offers—when you specify Bausch & Lomb protective eyewear with Bal-SAFE impact-resistant lenses.

Only the finest glass is used—made in the nation's only plant devoted exclusively to production of optical glass—Bal-SAFE lenses are free from imperfections that can lead to disturbed vision, headaches and nausea. Bausch & Lomb heat treating methods insure the precise control necessary for a superior degree of impact resistance.

Acquaint yourself with Bausch & Lomb safety eyewear and with the extra quality of Bal-SAFE lenses. There's a representative in your area.



Where visual correction is needed, Bausch & Lomb recommends the complete services of eye care specialists.

BAUSCH & LOMB

Just mail this coupon with your business letterhead to get your free copy of "Complete Eye Protection."

BAUSCH & LOMB OPTICAL COMPANY
90541 Smith St., Rochester 2, N. Y.

(For details, use Key # E-3 on card on page 77)

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Safety Maintenance and Production

FORMERLY "SAFETY ENGINEERING"
EST. 1901

VOL. 109, NO. 5 **MAY, 1955**

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COVER PICTURE
By courtesy of Association of American Railroads

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

It's Safe to Say

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★ WHY FEDERAL CONTROL?

THERE has been introduced into the United States Senate by Senator H. Alexander Smith of New Jersey a bill designed to strengthen Federal control over safety. The Smith Industrial Safety Act, S. 1091 has the blessing of seven other senators whose political persuasion is immaterial but who apparently feel that private industry and the respective states are not capable of furthering the cause of accident prevention without intervention by the Federal government.

The passage of Act S. 1091 into law would give rise to extending Federal bureaucracy to a field best served by private enterprise and the states themselves. Moreover, the bill is diametrically opposed to President Eisenhower's own expressed hope of returning as many Federal activities as practicable back to the states themselves.

Any such law would result in the Federal government pouring millions of dollars down the drain on its so-called safety programs better left to the states. Moreover, it would create a large force of inspectors and bog down industrial safety in a morass of red tape.

If private industry, the insurance fraternity and the respective states had not demonstrated long ago that they were prefectly capable of dealing with the problem of industrial accidents, there would be some slight excuse for Federal control of safety. It cannot be argued that any threat so intimately tied to our welfare as accidents should receive concerted action by duly constituted authorities. But transforming the safety movement into a solid gold political football, wrapped in Federal red tape, ignores the possibilities for colossal waste, and likewise ignores the tremendous gains in safety made in the past 25 years.

Under the terms of the Smith bill, the Secretary of Labor would be empowered to investigate the operation of state safety programs. As written, the Act is so broad that the Federal government would pay from one-half to three-fourths of the cost of state safety programs but in no case would payment to any state be less than $15,000 per year. Those programs would have to meet standards to be established by the Secretary of Labor under penalty of having the payment withheld pending compliance and the cost to Federal taxpayers conceivably could run into millions every year.

Presumably, the requirements would be the same for Nevada as for Pennsylvania; apply equally to Oregon and Florida without any consideration for purely local conditions, hazard exposures or type of industry. What then would happen to the especially tailor-made safety programs found so effective in the steel mills of Pittsburgh or Birmingham, western copper mines, electric companies in New York State or shipbuilding plants in Virginia? Can any single Delphic Oracle on the Federal payroll decide what is best to stop all forms of accidents and imply that private industrial and insurance company inspectors have not done a safety job?

The Smith bill would have the Labor Secretary hire specialists as consultants and create a new agency to have Federal inspectors assigned to tell industry how to operate with safety for employees.

No one would claim that all our industrial safety laws are perfect or that Utopia in safety has been reached. But to imagine that there is any short cut to the millennium through removing self-reliance and individual responsibility and substituting Federal control of bureaucracy is the ultimate in delusion.

We have no wish to point the scornful finger at well-meaning senators whose motives are beyond all question. But what of the 36,000 highway deaths, 38,000 home and farm accident fatalities. Must we broaden still further the Smith Act to provide for Federal highway police and assign a Federal safety man to all homes and farms?

Everytime a new hazard is introduced into an industrial operation, private management, insurance companies, safety equipment manufacturers, regional safety councils as well as State safety officials literally sit up nights to devise new measures of control. Have all those combined efforts been in vain? We think not! H. A.

our partner in business . . .

THE SAFETY ENGINEER

Out in the field in sub-zero weather, high on the sun blistered girders of a half-finished bridge, everywhere safety engineers are testing, checking, teaching . . . preventing life-stealing accidents before they happen. These men, whose experience on the industrial firing line is carefully evaluated and recorded by our field representatives, help Bullard engineers and technicians plan and devise safer ways for industry. Our hard hats are off to safety engineers — the lifeguards of industry — our partners in the business of saving lives. E. D. Bullard Co., 275 Eighth St., San Francisco.

Write for full color prints of this painting, suitable for framing, without advertising message.

BULLARD

Q: What about building felt hat comfort into hats and caps that meet all standard industrial tests?

A: We'll go you one further. This year's Bullard glass fiber hat and cap surpass industrial tests and are more comfortable to wear than that old felt hat. Exceedingly light in weight, they are cooler inside in the hot sun, because fiber glass deflects the sun and acts as an insulator. And for cool weather comfort there is a wide selection of winter liners. Hats and caps available in choice of molded-in colors. Also in colorful fiber glass we have electrical hats and caps and firemen's hats.

Q: Can we get color in aluminum hats to identify the trades of men on our crews?

A: Yes, at no extra cost, in bright non-fading yellow-gold, blue, grey, green, bronze and standard silver. Bullard aluminum hats and caps meet the same rugged torture tests as our glass fiber hats. The "Shorty" model is one of the lightest (only 10 ozs.), and most comfortable safety caps made. Notice the flared brim that protects the head, neck and ears.

For your questions – ANSWERS THAT SAVE LIVES!

This is what we mean when we call safety directors "our partners in business". Questions like these are referred to our research and development department. Here many of them are incorporated into Bullard products, so they will better protect your men in the field. Write for our new catalog with specifications and technical data on Bullard safety equipment.

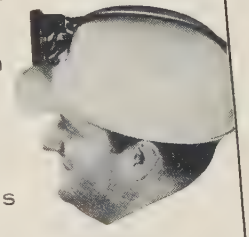
EVERYTHING BULLARD IN SAFETY ® HARD BOILED

see our catalog in 9 PLANT ENGINEERING FILE or write for copy

BULLARD

E. D. BULLARD COMPANY · 275 Eighth St., San Francisco, California

Q: There hasn't been a change in the design of miner's caps in years . . . what can you do about it?

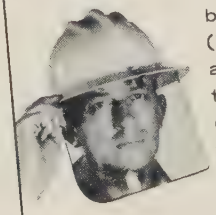


A: First we made our miner's cap from tough resilient glass fiber. We made it so tough that after the consistent dropping of an eight pound ball from five feet, there was no damaging effect. We put a rolled edge all the way around the cap to keep the wearer's ears and neck from being nicked and also to hold side wire lamp cords. Across the top we put a deep groove that offers added girder-like strength, as well as securing an [illegible] cord.

Safety hat accessories most wanted by safety engineers!

Universal size headband that can be adjusted in seconds. Entire hammock and band easily snap out for replacement.

Chin straps of heavy elastic or web are available to fit all styles of Bullard safety hats and caps. They can be quickly installed.



Face shields in both clip-on (illustration) and swing-back types are specially made to fit all safety hats and safety caps.

Bullard has designed six types of winter liners to provide comfort and warmth to wearers of hard hats.

Check List of Aids to Production:

Through Safety—

Eye Protectors 12
Use of Ladders 18
Linemen's Safety Equipment 28
Ear Mufflers 53
Hearing Protectors 56
Highway Safety Flare 65
Vehicle Stopping Distances 65
Banner of the Month 71
Silicone Tanned Shoes 72
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All Plastic Goggle 76
Safety Trim Board 76

Through Maintenance—

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Housekeeping Contest 25
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Audiometric Test Room 52
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Hearing Protectors 56
Machine Mounting 56
Exhaust Silencers 57
Acoustic Panels 57
Air Blower Resuscitator 71
Water Cooler 73
Portable Ventilator 74
Cleaner and Towel Dispenser 76

Through Fire Protection—

New Fire Detector 42
Textile Flame Retardant 71
Paint Heater 72
Cooler for Hazardous Areas 73
Pressurized Water Extinguisher ... 73
Fire Resistant Curtains 74
Dry Chemical System 74
Cold Metal Cleaner 75

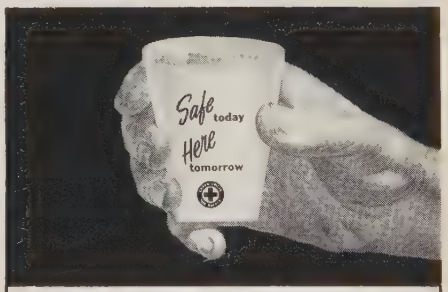
For further details about products described on opposite page, use Key # E-4 on card on page 77.

START CUTTING YOUR ACCIDENT RATE —HERE→

. . . with safety-imprinted AJAX Cups.

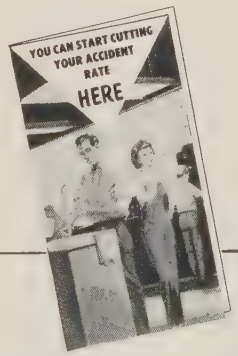
These crisp, clean, easy-to-drink from cups will put tested safety messages right in your worker's hands several times a day—when he's relaxed, receptive, ready to read. And the National Safety Council confirms that safety messages *that get read* are one of the most effective ways to help reduce accidents.

AJAX Cups lessen the risk of transmitted infections, too; reduce absenteeism, promote good employee relations. Any bubbler fountain is easily converted to provide this safer, cleaner, more generally preferred method of drinking water. Ask your paper merchant about it.



AJAX® Cups — one-piece, wedge-shaped, easy to hold and drink from; in 4, 6 and 7 oz. sizes; packed imprinted with assorted stock safety messages at no extra cost or your own message to order.

AERO® Cups — for those who prefer a flat-bottom cup; in 3, 4, 5 and 6 oz. sizes. Also with stock safety messages or your own message to order.



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WORLD'S LARGEST MANUFACTURER OF ENVELOPES USE ®

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15 DIVISIONS FROM COAST TO COAST

(For details, use Key # E-5 on card on page 77)

C-1S

So far so good...

but will she make it?

High heels and leather soles offer scant protection against skidding on your high-gloss floors. That's why you need LEGGE *Safety* Floor Polishes.

LEGGE Polishes bring out the *true* lustre of your flooring *without* slipperiness. Their co-efficient of friction goes up to *75%* beyond U. L. requirements. And the Safety *lasts*. Slip-meter readings taken 4 months after application show no appreciable loss in slip-resistance. Hospitals, industrial plants and office buildings throughout the country report reductions of *98%* and *more* in slip-accidents.

How much does it cost?

Stacks of case histories testify that LEGGE Maintenance saves up to *33⅓%* on labor and materials. Each polishing lasts far longer. And the costly process of stripping your floors is rarely necessary. For Safety, appearance *and* economy, clip this coupon today.

YOU'RE SAFE WHEN YOU HAVE LEGGE TO STAND ON
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Branch offices in principal cities.

☐ Have a LEGGE Safety Engineer call to discuss my floors. No obligation.
☐ Send a Free copy of your booklet: "Mr. Higby and the Gremlin"

Name_____
Firm_____
Street_____
City_____ Zone____ State____

(Use Key # E-6 on Inquiry Card on page 77)

THE Future SHOWS

Chicago, Ill. *May 2–4*

Thirty-second Annual Midwest Safety Conference and Exposition (Sherman Hotel). Joseph Stech, Manager, Greater Chicago Safety Council, 10 N. Clark St., Chicago 2, Ill.

Easton, Allentown, Bethlehem, Pa. *May 2–4*

Twenty-eighth Annual Eastern Pennsylvania Safety Conference (May 2, Hotel Easton; May 3, Hotel Americus and Hotel Traylor; May 4, Lehigh University). H. A. Seward, secretary, Lehigh Valley Safety Council, 602 E. 3rd St., Bethlehem, Pa.

Syracuse, N. Y. *May 16–18*

Central New York Safety Conference & Exposition (Hotel Syracuse & Hotel Onondaga). Walter L. Fox, Manager, Safety Division, Syracuse Chamber of Commerce, 351 S. Warren St., Syracuse 2, N. Y.

Chicago, Ill. *May 16–20*

Eighth National Materials Handling Exposition & Conference (International Amphitheatre). Clapp & Poliak, Inc., exposition management, 341 Madison Ave., New York 17, N. Y.

Winston-Salem, N. C. *May 18–20*

Twenty-fifth Annual North Carolina Statewide Industrial Safety Conference (Robert E. Lee Hotel). H. S. Baucom, Safety Director, North Carolina Industrial Commission, Raleigh, N. C.

Duluth, Minn. *May 19–20*

Thirty-first Annual Conference, Lake Superior Mines Safety Council (Hotel Duluth). John Anderson, secretary, 18 Federal Building, Duluth 2, Minn.

Richmond, Va. *June 2–4*

Twenty-first Annual Meeting Virginia Safety Association (Jefferson Hotel). William M. Myers, executive secretary, Virginia Safety Association, Room 302, 1103 E. Main St., Richmond 19, Va.

Hartford, Conn. *June 7–8*

Tenth Annual Connecticut Safety Society Conference (Statler Hotel). William G. Willse, Manager, National of Hartford Group, 1000 Asylum Ave., Hartford 15, Conn.

Hartford, Conn. *June 7–8*

Second Annual Meeting of The New England Accident Prevention Association (Statler Hotel). Everett W. Martin, President Pro Tempore, 65 Whitney Ave., New Haven, Conn.

Los Angeles, Calif. *July 12–14*

Second Western Plant Maintenance & Engineering Show (Pan Pacific Auditorium). Clapp & Poliak, Inc., exposition management, 759 Monadnock Bldg., San Francisco 5, Calif.

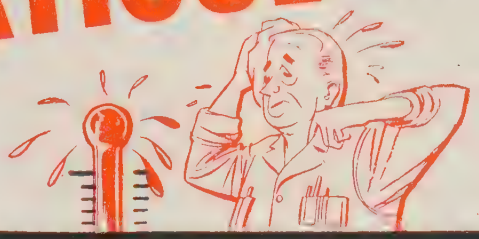
Cleveland, Ohio *Sept. 13–15*

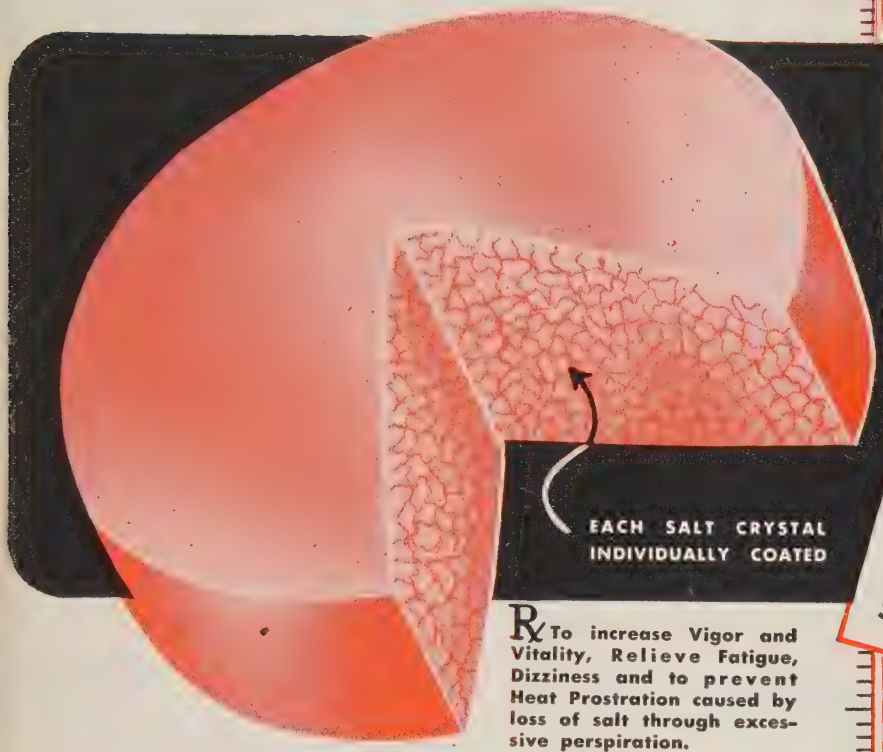
Seventeenth Annual Ohio State Safety Conference and Exhibit (Hotel Carter). Michael L. Stefani, General Manager, Cleveland Safety Council, 2073 E. 9th St., Cleveland 15, Ohio.

York Harbor, Me. *September 15–16*

Twenty-eighth Annual Maine State Safety Conference (Marshall House). Arthur F. Minchin, Secretary, Department of Labor & Industry, State House, Augusta, Me.

Combat HEAT FATIGUE with





PEP-UP® IMPREGNATED salt tablets

Will not cause Nausea or Stomach Distress

℞ To increase Vigor and Vitality, Relieve Fatigue, Dizziness and to prevent Heat Prostration caused by loss of salt through excessive perspiration.

Releases Salt Immediately!

(Not Enteric Coated)

- **Controlled (slow) dissolving eliminates nausea.**
- **Starts dissolving immediately.**
- **Dissolves completely in about 100 minutes.**
- **No delay in getting salt into system.**
- **Withstands high temperatures and rough handling.**
- **Can be stored for long periods without deteriorating.**
- **Will not absorb moisture from air and clog dispensers.**
- **The Formula used for producing Impregnated Salt tablets was developed at the United States Naval Medical Research Institute. The tablets meet government specifications for Type III, Class C Impregnated Salt tablets (specifications set forth in Federal Standard Stock Catalog No. SS-S-31e, Section IV (Part 5), dated April 29, 1954, and Amendment No. 1 (June 15, 1954).**

Expendable Dispenser

PEP-UP Impregnated Salt Tablets come to you in sanitary, factory-sealed Dispensers at no extra cost. THROW AWAY DISPENSER WHEN EMPTY. HANG UP A NEW ONE. Save the expense of purchasing, servicing and replacing individual dispensers.

Working for You to Make Safety Work

UNITED STATES SAFETY SERVICE CO.

KANSAS CITY 6, MISSOURI

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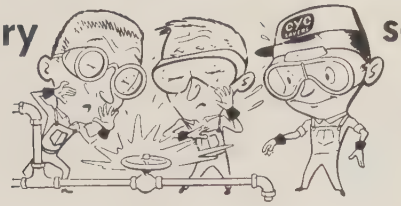
IN CANADA: PARMELEE, LTD., TORONTO & MONTREAL

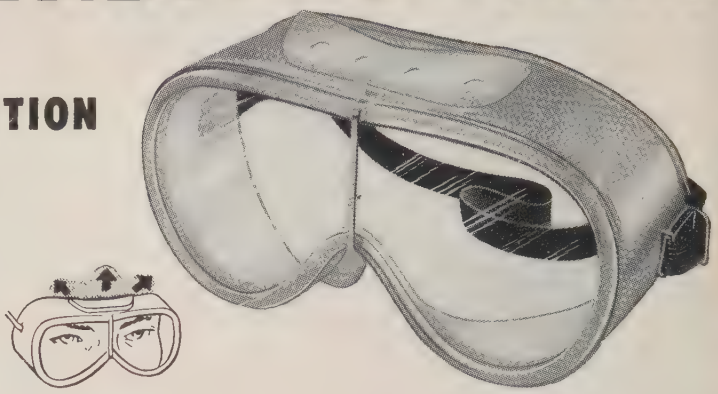
(For details, use Key # E-7 on card on page 77)

WATCHEMOKET eye SAVERS

COMFORTABLE TO WEAR

COMFORT PLUS 100% PROTECTION





SOFT VINYL FRAME Goggles

COMFORTABLE • LIGHTWEIGHT • FORM-FITTING

- **Comfortable** . . . extra wide lens . . . large vinyl frame fits over all prescription frames.
- **Stac-Vent** . . . better ventilation reduces fogging and provides utmost safety.
- **Eye Savers Lenses** . . . methacrylate lenses are safer . . . shatterproof and never pit.

MODEL 440SV — clear frame **460SV** — green frame
Heavy Impact Goggles with replaceable optically perfect, methacrylate lenses. Clear Lens (C) .125" thick.

Green Lens: Light (G2) Medium (G3) .080" thick.

MODEL 441SV — clear frame **461SV** — green frame
Average Impact Goggles with replaceable optically perfect, acetate lenses.

Clear Lens (AC) .060" thick. Green Lens (AG) .050" thick.

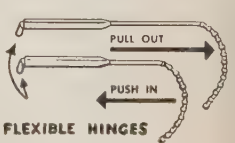
MODELS 490 or 491 — opaque black frames
Furnished with Stac-Vent only
Methacrylate Lenses: same as 440
Acetate Lenses: same as 441

COMFORT PLUS 90% PROTECTION

Worn 100% of the time

TUC-AWAY Spectacles

- **Optically Perfect Lenses** . . . .080" thick never shatter or pit . . . resist heavy impact. Available clear, green and gold.
- **Side Shields** . . . in 4 styles . . . an integral part of the lens . . . side and bottom protection with clear vision.
- **Economical** . . . initial cost is low . . . maintenance is eliminated, lenses are replaced by each wearer.
- **RETRAX** . . . One size fits every worker thanks to Adjustable Retrax Temples and Universal Nose Piece.



MODEL 415 plastic retrax temples (illus.)
MODEL 412 metal retrax temples
MODEL 410 plastic club temples

For details see your Authorized Eye Savers Suppliers or write direct

Quality Eye Protective Equipment ***Made by the Leaders in Plastics***

WATCHEMOKET OPTICAL CO., INC.

238 West Exchange St., PROVIDENCE 3, R. I. *In Canada: Levitt-Safety Limited, Toronto 10, Montreal 26*

ASA Code for Graphic Arts Industry

New American Standard Safety code for graphic arts includes standardized colors and order for vertically-mounted press controls.

PROTECTING PERSONNEL and increasing efficiency in operating printing presses are the object of the first national safety code especially designed for graphic arts equipment.

The new American Standard Safety Code for Controls and Signaling Devices for Graphic Arts Presses has just been released. The American Standards Association recommends the voluntary adoption of the code by printing companies at their earliest convenience — whenever they purchase new equipment or make any major change or alteration in existing equipment.

"If this code is used throughout the printing industry as each plant renews its equipment, confusion in the use of these controls will be prevented, thereby eliminating a source of serious injuries and increasing efficiency in operation. It will provide uniformity throughout the industry so that on change of employment, workers will be familiar with control operations in their new jobs," according to Admiral Hussey, managing director of the ASA.

He adds: "The committee, composed of representatives from throughout the graphic arts field, who developed this standard, realized the psychological implications of safe equipment in forming these requirements—a man who appreciates a good machine, properly-equipped to guard him from every personal injury will be free to apply his wholehearted energy to the operation of such a machine."

Commercial Publication Presses

The code is for both publication presses such as are used for newspapers, magazines, rotogravure, large catalog work, etc.; and for commercial presses, either sheet-fed or web-fed. Push-button stations for the presses are required by the code to be arranged in a single row and vertical, except in a commercial press where sometimes this arrangement is impractical for convenient mounting, then the arrangement may be horizontal.

Control stations for publication presses will be provided with push-buttons with the following designations and colors:

GREEN: A maintained-contact button marked **SAFE.** When depressed, it prevents the press from being started, or when the press is moving, prevents further increase in speed.

BLACK: A maintained-contact push button marked **READY.** Depressed, it establishes permissive circuits for starting the press.

YELLOW: A momentary-contact button marked **FASTER.** Starts the press and increases the speed as long as the button is held depressed.

BLACK: A momentary-contact button marked **SLOWER.** Decreases the speed, eventually arriving at threading speed.

LIGHT GREY OR ALUMINUM: A momentary - contact button marked **INCH.** Allows movement at threading speed.

RED: A momentary-contact button marked **STOP.** The stop button ***only*** shall be a long push button.

Control stations for commercial presses have a stop button and may have buttons for **INCH**, **RUN** (black), **SLOW-FAST** (black), and **REVERSE** (yellow). Certain designations formerly used on push buttons which looked similar to other words were eliminated by the committee who developed the standard. In each case, the push button was marked with the term which best described its function.

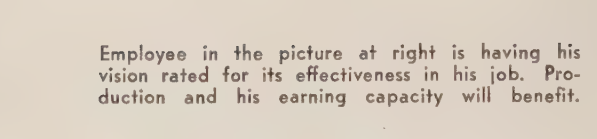
The standard outlines requirements for safelights and warning signals. It specifies that control circuit arrangements be made to assure signals being operated prior to any movement of the press. An appendix is included with the standard to

(Continued on page 24)

How an Eye Program

by LUTHER WEIBEL

EYE PROTECTION SERIES
next article in June



Employee in the picture at right is having his vision rated for its effectiveness in his job. Production and his earning capacity will benefit.

THE WORK FORCE OF our hosiery plant would be termed a mature work force in that 62 percent of our employees are women averaging 33 years of age. Our average male is 41 years of age. One out of two employees has been with the company 15 or more years. It is easy to see that we have a reliable, fairly efficient group of employees who have spent most of their time producing hosiery.

The employees are economically independent and have no hesitancy at showing their independence if work conditions are displeasing to them. In fact, 80 percent of the employees are married; and, of this group, 88 percent own their homes mortgage free. We know that the work force is emotionally mature and happy in their work and home life.

The problems of industrial vision are not new. Over a period of many years many industries have toyed with the idea that an employee's vision is necessary to good job operation. Certain industries in the past have required that all employees wear glasses; some to improve the employee's vision while others required glasses to protect the employee's eyesight from accidents. Some industries have insisted on glasses while other industries refused to employ anyone who had glasses—considering them sub-standard employees visually.

Today the eye specialist is a professional interested in doing a good job rather than in selling glasses. Competent eye specialists, both the optometrist and ophthalmologist, prescribe glasses only when it is necessary to the job and to the employee's safety.

One of industry's greatest problems is to see that the eye specialist is given enough information regarding the employee's job so that he, the eye specialist, can better prescribe glasses for the employee's job comfort and eye safety wear.

Determining Visual Skills

In order to determine visual skills necessary for a specific job, a scientific instrument is required so that the testee may be screened in a short time and so that the results may be reliable. We use one of several types of instruments developed to fill this need. All of these instruments do their job swiftly and give fairly accurate results on certain specific visual skills.

Industry is not professionally qualified to determine whether or not glasses are needed in order to operate a specific job competently. Therefore, the vision instrument must, of necessity, be non-diagnostic in nature. When we test an employee we advise him that the instrument does not tell us whether or not glasses are needed. We do explain to the employee that the instrument aids the company in screening those employees who do not measure up to the visual standard set for a specific department.

I, personally, am of the opinion that industry cannot force any type of testing program on its employees This applies to the use of the instrument both as a technique for determining employees "eyefully" able to do a job and for those employees who need safety glasses. A forthright program must be effected

Came to our Chemical Plant . . .

which will sell this program to the employees. In the two plants in which I have had experience with a vision testing program, we have never had less than 95 percent participation in this program and this has been wholly on a voluntary basis. Good human relations require that any information regarding an employee's personal life whether it is poor physical conditions or poor vision, must be kept confidential in order for industry to retain the employee's confidence.

Must Fit Industry

Installing a vision program must be conditioned to the organization itself. A procedure that may work in one industry, or department, may be a total failure in others. In some plants you can be successful by posting a notice on the bulletin boards, while in other plants, the posting of such a bulletin may result in filing of a grievance by the union on the basis that any change in working conditions is a bargainable issue (this is defined under the Taft-Hartley Law.).

Before installing any vision or safety program in the plant, it is necessary for top management to recognize the need for it and to go all out in its support. Many industrial relations divisions have had so-called pet projects which failed because top management did not wholeheartedly support the project. Selling any program must, of necessity, come from the top.

We brought our Industrial Vision Program into the plant about the time industrial relations division was established. We were aware that our employees had had no psychological testing, vision testing, etc. prior to this time. We were afraid that establishing this program would become an issue with the unions that were battling for bargaining rights. The election was just around the corner. Considering all of these factors we approached the problem of explaining the program to the employees with much consideration and a definite selling plan.

We had a number of group meetings with our supervisors, and then tested these supervisors individually before screening any of the rank and file employees. No human relations program of any kind should be installed without the line supervisors being made aware of the complete program. Experience has shown that talking over our problems with our supervisors obtains quicker and more lasting results. Releasing a paper from the inner sanctum of management is a cold way of trying to sell a living human relations program.

In talking over our problems man to man with our supervisors, we obtained ideas from them on how to better install the program. It let our supervision feel that they were assisting in the formulation of policy and that they are in truth a member of the management team. The support of these supervisors has paid off as they are the biggest boosters we have in our plant for our visual program.

Immediately following the meeting with our supervisors and also before testing the employees, we had a meeting with union representatives. We explained to the union, exactly as we had explained to the supervisors, that we anticipated that employees who were poor in pro-

duction and quality had visual problems and that we would like to prove or disprove our premise. As we were on piece work or incentive earnings we explained that we thought it possible that if employees were "eyefully" able to do the job, their earnings would be increased; while at the same time their bad work would be decreased.

Unions Consulted

Unions dislike any program in which the employees take a loss of earnings and, therefore, we pay for the employee's time at the testing instrument. We emphasize that no employee's job will be affected by the results of the eye examination. We do state, and very firmly, that we expect to refer those employees with sub-standard vision to an eye specialist, at our expense. We explain to the employees, and to the union representatives, that one of our prime reasons for using the testing instrument is to improve our method of placement of new employees. Naturally, we emphasize that the rehabilitation of our skilled employees is very necessary.

The unions have cooperated very well in this program. I cannot see why any union would oppose a vision program or a good safety program providing the same care is used in explaining it as was used when we started our vision testing program. Many industries are apprehensive about dealing with unions on modern management psychological testing techniques. In actual practice many of the old line unions have built elaborate training centers and are using psychological testing and modern training procedures to assist them in doing their training job. Certain unions have established rehabilitation centers so that employees who have become unable to do a specific job may be rehabilitated and trained so they can do another type of job. If management takes the time to make unions aware of the need for proper safety measures and for good vision on the job the union can do a great deal to sell the program to its members.

Despite the fact that we had explained our program to the supervisors and to the union, we thought it necessary to discuss the program with the employees themselves. We called departmental meetings, brought our vision testing instrument directly into the work group, and explained to them exactly what we had explained to the supervisors and the union. We emphasized time and time again that no employee's job hinged on the results of the test. And that no employee need fear losing his job because of failure to pass the test. We tried to build up the program so that the employees knew that if they were improved visually and were better able to do the job they would have increased earnings. Their security is also greater as their work record shows less bad work.

We had only one departmental meeting because it was so successful. The employee demand for the instrument was so great that we brought it into the other departments directly.

"Eye-Conscious" Employees

From the very first day that the vision instrument came into our plant the employees became exceedingly "eye conscious." Employees who had never seen an eye specialist began to go to the eye doctor and it was very obvious to us that many employees were wearing glasses who had no glasses before the program. Many of these employees saw the "eye doctor" prior to being tested.

The local newspaper and even newspapers in the larger metropolitan centers heard about our vision program and featured a number of articles about it. We were fortunate in attracting the attention of a very popular columnist. He visited our plant, saw the instrument, was tested on it, talked to our employees about it, then wrote a very homey story about our plant. It was very good public relations. The news releases attracted the attention of the community and members of the employees' families visited the personnel department to be tested. We had grandparents, children, and a variety of kinfolk visit the plant and we tested them. However, we explained to them that we could not tell them whether or not they needed glasses but that they would have to visit an eye specialist to obtain professional advice. We do know that this approach was a great stimulus to our public relations and has been a very important factor in creating community good will.

We take the instrument directly into the department in order to test employees. In those departments which have a high noise level we take the instrument as near to the department as possible so that the employees do not lose too much

GOOD WORK AND GOOD VISION
THOSE MEETING VISUAL REQUIREMENTS
BAD WORK
THOSE NOT MEETING VISUAL REQUIREMENTS
BAD WORK
75% MORE
63% OF THOSE WHO MEET THE VISION STANDARD PRODUCE WORK OF AVERAGE OR BETTER QUALITY
only 33% OF THOSE WHO DO NOT MEET THE VISION STANDARD PRODUCE WORK OF AVERAGE OR BETTER QUALITY

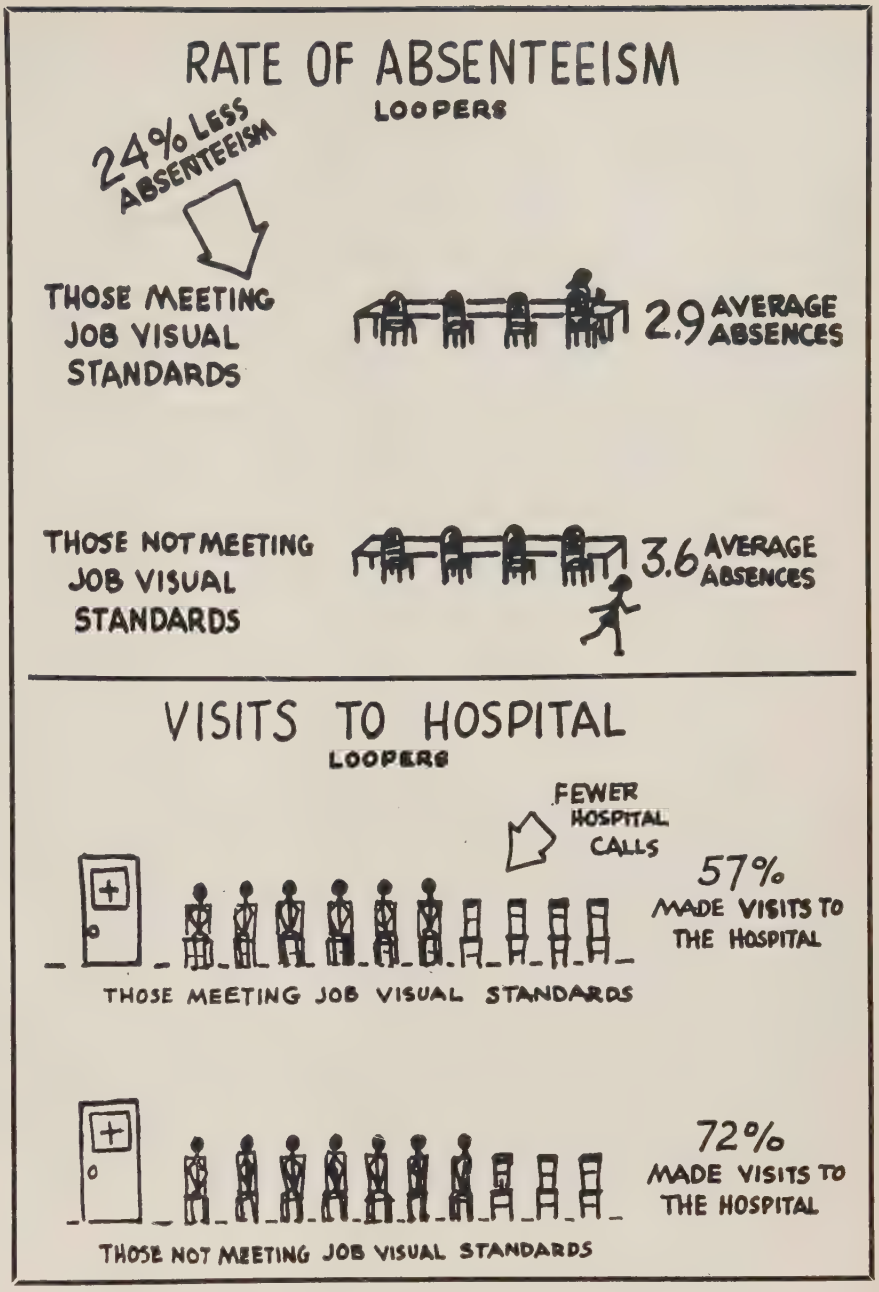
time going to and from the instrument. We test employees exactly as they work on their job. If they wear glasses we test them with glasses. In our state the Workmen's Compensation Act holds that industry is responsible for loss of vision under certain conditions. Therefore, we check those employees who normally wear glasses, without their glasses, at our distant skills so that we can know the legal status regarding their vision. This is done for legal purposes only and is never used in setting job visual standards.

At first we employed a technician who was trained to operate the instrument. We have since trained one of our own employees to operate the instrument. Testers must have the confidence of the employee and it is certainly a help to have a "slick chick" as a tester. She surely can aid in selling the program.

Setting the Visual Profile

In setting a visual profile, or standard, we separate the better employees from the poorer employees. We compare their scores on the vision instrument and if the good employees have substantially different visual skills we assume that these skills are necessary to that specific job. In the larger departments we use only the top 25 percent of the better employees and in the smaller departments we use the upper 50 percent. In comparing the 12 visual skills which the instrument tests, it is relatively simple to establish the visual profile for specific jobs.

Where specific methods for determining an employee's efficiency are difficult to obtain, a simple merit rating system may be used. One method is to place the name of the employee on a small card and tell the supervisor to place the good employees in one pile and the poor employees in another pile. Then, the assistant supervisor does the same thing. The results show that those employees who are rated good and those employees rated poor by both foremen are usually the same. Where there is a difference in opinion of the two raters we eliminate them when we establish our visual pattern. Naturally, where a formal merit rating procedure is used the results are more accurate.



You will find that the old standard of 20/20 on the Snellen Chart is not a proper visual test for all job operations. Where a job requires very good acuity at near point, the Snellen Chart would probably help us select the poorest applicant for the job. By using a vision instrument to test specifically for near point, we find that we can select those employees who have visual skills necessary to do a particular job. When this happens we reduce our training cost and time and have happier employees on the job.

Where you do not have the trained personnel to establish your own visual standard, test results may be sent to a central statistical department where they will analyze the test results and set visual standards.

What's to Be Done?

What is to be done with an employee whose visual skills do not meet the visual standard for a specific job? We write a letter to that employee explaining that he should see an eye specialist. When we started out we used a form letter, but we have found that a personal letter has been more effective for

those employees who are sub-standard. For those employees whose vision meets the standard we use a form letter. The secret for continued success of any vision program is to supply the employees with their results as soon as possible after the test is taken. We try to get the results of the test to the employee in 24 hours.

In the letter to the employee with sub-standard vision we explain that we do not know whether or not glasses are needed or whether or not he needs his glasses changed. We do state that his vision is below the department standard. We further tell him that if he has his eyes improved by a professional eye specialist he will probably have fewer headaches, etc. and that his production and quality should show improvement.

We pay for the employee's eye examination when we refer him or her. The employee pays for any glasses except safety eye wear, which the company pays in its entirety. We permit payroll deductions for any glasses prescribed by an eye specialist. We find that payroll deductions speed up an employee's visit to the eye specialist.

When it comes to protective eye wear we have had the same experience as many industries when we have posted notices stating that "goggles" were required in certain specific plant areas. We recently had an experience where the department refused and we were faced with what amounted to a sitdown strike or the withdrawal of our directive. We withdrew our directive and applied a much more sensible solution to our problem.

First of all we brought in our testing instrument and decided that we would utilize protective eye wear which was adequate from a safety standpoint and at the same time had eye appeal, particularly for the ladies. Of prime importance was the comfort which could be obtained from glasses which were not of the goggle type. We are supplying to our employees eye wear which approximates the types of glasses an employee would normally use for street wear. The heavy and hot goggle type glasses have been utilized only in very hazardous areas. In these hazardous areas we have insisted on side shields.

We do not have safety eye wear throughout the entire plant. In order that our safety director, safety committee, and supervisors know who has been supplied with these safety glasses, we have posted lists of the names of these employees and periodically a check is made to assure that these employees are wearing these safety glasses.

Cause for Failure

The failure of many vision and safety programs is that follow-up is forgotten. I have been in plants and seen vision testing instruments covered with dust despite the fact that they represent a rather substantial capital investment. Articles on the bulletin boards and in plant house organs certainly stimulate and keep alive any human relations program. We have used, very effectively, the cartoon approach in selling our vision program. From time to time national magazines have clever cartoons on vision. As a rule the use of these cartoons can be obtained without charge by writing the editor and requesting permission to reprint the cartoon. Not too long ago we used a cartoon from a national magazine showing a man reading a newspaper with glasses fastened to his elbow and his wife saying it's about time he had his glasses changed. It was funny, and at the same time there was a close-to-home moral to the story.

We make sure that all eye specialists in our community are given a copy of our visual standards. We have had several groups of eye specialists visit our plant. Following the plant tour we have had open floor discussions of our visual problems with these specialists. Always, we make sure that the specialist knows the distance the operator works from his job and at what angle the work is done. When the employee goes to the eye specialist he carries with him a copy of his test on which we mark in red our standard.

Occupational glasses, whether they are safety wear or otherwise, are paid for by the company. We define occupational glasses as those which are needed on the job exclusively and which would be practically useless to the employee elsewhere. An exception to this, of course, is our safety eye wear which are prescription lenses and which could be used at home.

One of our major problems is to see that the safety wear remains in the plant after working hours. The reason for attempting to keep the glasses in the plant is so the employee doesn't leave them at home. At the same time, if he or she quits, we have access to the glasses on termination.

From the Specialist?

What do we except from an eye specialist? It is natural to anticipate that an employee's vision may be improved after proper attention from an eye specialist. Where it is impossible to improve the vision the company should be so advised. In actual practice after an employee has had his glasses changed, or glasses prescribed for the first time, we tell that employee to see us in about 6 weeks in order to see if his vision meets the company standard. Where there is a great discrepancy between the employee's vision and the standard, we advise that employee to return to his eye specialist for a recheck. Often these return visits pay big dividends.

The adjustment of eye wear is very important. It is advisable to have someone in the plant technically trained so that eye glass frames can be adjusted properly. Many of the optical companies run training sessions for in-plant employees so that these employees may in turn fit frames properly.

We are not particularly interested in knowing what is wrong with an employee's vision but whether or not the employee can be brought up

(Continued on page 45)

Mrs. Louise Bane holds her twins, Billy (right) and Wendy (left
Fire Chief Masie is at the right, Assistant Chief Jones at left.

The Rescue of Wendy Bane

Two-month-old Wendy Bane, a twin, was limp and unconscious when the family physician and firemen from the Rennerdale, Pa., Volunteer department hurried into the house. Her respiration had been blocked as the result of a choking spell.

The physician's examination detected no heart beat. He motioned to Fire Chief Jim Masie and Assistant Chief Herb Jones. They quickly strapped the facepiece of a Pneolator over Wendy's nose and mouth. All watched her intently as the instrument fed life-giving oxygen into her tiny lungs. Seconds passed.

Then the physician moved his stethoscope over Wendy's che again. He looked up. His relieved face told that the heart bea had started. A few hours in the hospital completed the cur Wendy was taken home.

This was the first emergency case for Rennerdale's Pneolato since the unit was donated to the department by the Woman Auxiliary. Wendy's mother, Louise, a registered nurse, reall means it when she says: "I'll love those ladies the rest of my life.

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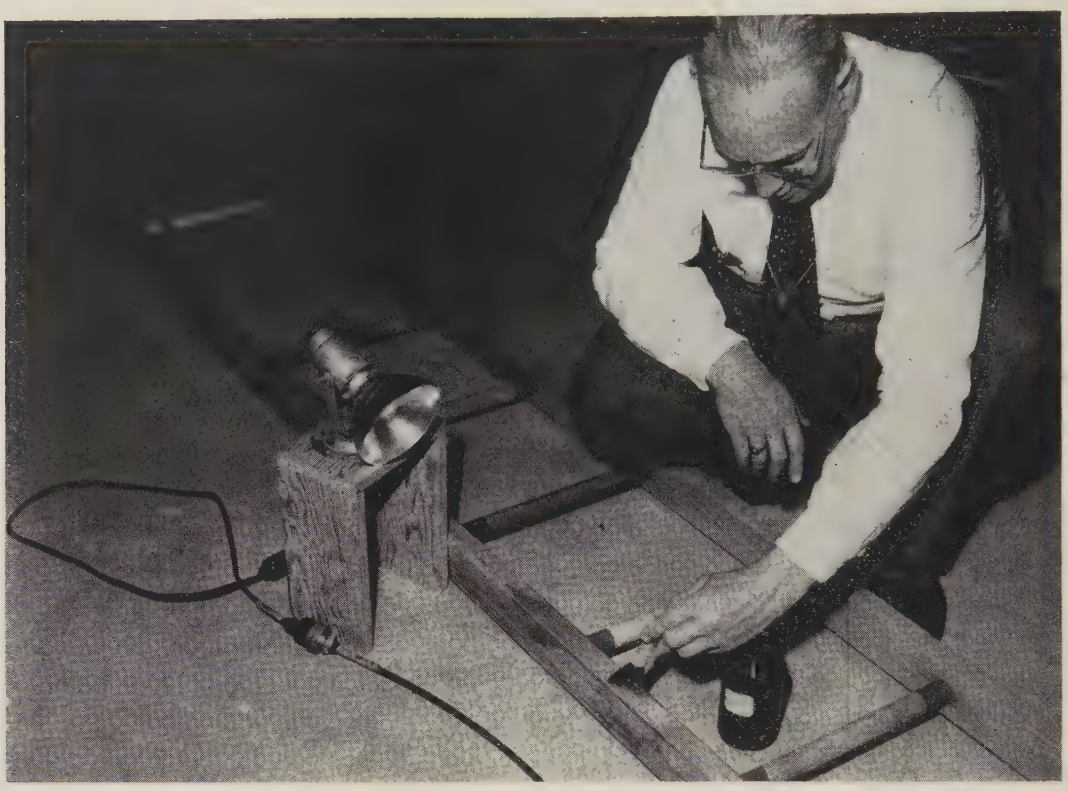
INSPECTION—To find tiny but dangerous compression failures, inspector uses oblique lighting and quick-drying solvent to wet wood for clearer look.



THE RESPONSIBILITIES IN LAD

IT APPEARS THAT as long as we have ladders we shall have ladder accidents; primarily, perhaps, because both have always been taken for granted. If we must mount to higher elevations we must use ladders, and when the ladders fail us we are inclined to be all too lackadaisical about the whole thing. It is indeed surprising that, as universally used as ladders are, we still know so very little about them. Certainly the reckless abandon with which some of us abuse them is highly indicative of gross, abysmal ignorance on the part of these ladder users.

Responsibility . . .

If we are to inject a little sanity into this situation we must begin with the ladder manufacturer who has the responsibility for selecting only the best in woods and seeing that these are incorporated in a design best developed to utilize the advantages of wood. It is also the function of the manufacturer to see that the workmanship is first class as well as the fittings or hardware, for unless both pass rigid inspections some dangerous products could reach the public.

For the Manufacturer . . .

Comes now the problem of transportation. After years of inspecting newly received consignments from reputable ladder firms it is a rare experience for this writer to find a completely undamaged shipment. Rough usage in freight car or motor van often played hob with some detail of the ladder's makeup. Step ladders suffered most often and most severely. The damage usually affected the lighter construction of the back braces, especially where nails replaced wood screws in the assembly. Most common carriers are quite cooperative in paying for the correction of such travel damaged units, and the resulting product is fully acceptable from an inspector's point of view.

For the User . . .

To the purchaser or user comes the responsibility of selecting the right ladder for the right job to the end that an otherwise excellent tool is not grossly misused and permitted to be the cause of an accident. For

By PAUL C. ZIEMKE

LADDERS & SCAFFOLDS SERIES
more articles in June and July

USE—Two men, having placed ladder at correct angle to wall, are careful to have one man steady ladder and also hold it straight while the other mounts it to lash top securely.

ER SAFETY

many people the term "ladder" means but one thing—a device to gain access to some elevated point above normal reach. There are special jobs for special ladder units, just as there are special craftsman for special craft functions. Ladders must be sufficiently tall to reach the work site so that neither stretching nor reaching are required to perform the work. Step ladders may not readily be substituted for straight ladders, and vice-versa.

Using a ladder as a scaffold plank is a good way NOT to obtain the maximum usefulness from your money. Nor is it a good policy to use the ladder as part of the support of a scaffold where excessive stresses may be imposed on it. Storing a ladder on damp earth, hanging it on wall supports that tend to distort

STORAGE—Here ladders are properly stored on racks to prevent warping, and away from heat to prevent drying out.

its shape with time, or leaving it for extended periods in a hot place are abuses that shorten the useful life of a ladder and tend to produce a tool that may cause a very severe accident.

Wood has several admirable characteristics: such as light weight combined with high strength, and the ability to be easily manufactured. Add to these qualities the readiness with which a ladder may be properly repaired and rot-treated, its high dielectric and low thermal conductivity, and there remains little to be desired of it as ladder building material. Quite a large variety of woods lend themselves to the production of good ladders. Some research has been conducted in the art of using laminated woods, now that waterproof glues and short wave electrical heating techniques have combined to produce a laminate under pressure conditions that shows great promise for the future.

Contrary to the popular opinion, the inspection of wood for the fabrication of ladders is really no serious technical undertaking. Actually each piece of wood can be scrutinized for recognition of its own peculiar composition and structural characteristics. Once this is determined the wood can be classified for the particular type of ladder for which it is best adapted. Wood fibres, like the pages of a book, tell the inspector a host of facts that influence his choice greatly. Where the mere naked eye fails him he has resort to scientific equipment. However, this special technique is infrequently used.

Springwood versus Summerwood

The spring growth of many woods is readily recognized by noting the large and thin walled rings, indicative of the most rapid development of the season. Contrasted with these rings are those of the slower summer growth which are thick-walled and smaller. The 2 rings comprise the season's production of wood fibre since none is produced in the winter months. The thin walled rings present the least desirable wood for ladder production while the heavier growth of summer is more nearly ideal. It is the proportion of summer wood to the spring wood in a given piece that determine its acceptability in the eyes of the inspector.

As the tree reaches its ultimate growth the greater number of cells from the center outward stop growing or conducting sap. Actually they serve little purpose except to give mechanical rigidity or strength to the tree. It is the darker-hued cells in the center of the log that are identified as heartwood. In contrast the outer layers are light-colored and fresh appearing. This is the sapwood portion of the tree. It may vary greatly among similar species, among different trees of the same species, and even in different parts of the same log.

The color of the heartwood appears to have developed a fairly widespread prejudice among wood users, who assume that the color is indicative of poor quality.

This popular misconception, of course, assumes that sapwood, by the same token, is more desirable than the dark-hued heartwood. This is not necessarily true, since the density of the wood actually is the criterion for selecting wood. The change from sapwood to heartwood during the life of a tree does not result in any appreciable change in strength. Hence, color is not significant.

The forest tree is influenced by a host of changing factors that seriously affect the wood produced in the mature tree. Thus it is to be expected that the clear wood of any species varies in density and strength qualities. Change is common to all materials, yet materials differ widely in the amount of variation. Among all this confusion of variability it is reassuring to know that the density of wood substances, neglecting species, is reasonably constant. The value of 1.54 is commonly accepted.

We may assume then that the reason some woods are heavier than others is because some woods contain more wood fibres than others. Put another way—more space is taken up with heavy cells and smaller cell spaces. Therefore, since high density wood contains the most wood substance, it must for that reason become the index for strength properties. Low density woods are thereby eliminated as unsuitable for ladders requiring the ultimate in dependability.

Hardwoods and Softwoods

Actually, the terms are misnomers since the reference should not be to the hardness or softness of a wood but rather to the type of leaves borne by the tree. We should more properly say "trees with broad leaves" for the hard woods and "conifers" for the soft woods. Under the description "broad leaves" we find the hickory, oak, maple, birch and ash. In the "conifers" we find the spruces, pines and cypress.

Moisture Content

With but rare exceptions saw logs are "green" as they enter the mill. Their natural moisture content in the form of sap may be greatly augmented by an extended storage period in the mill's holding pond. The greater portion of this moisture will require removal before the wood becomes acceptable as ladder manufacturing stock.

Both weight and excessive springiness are reduced noticeably as water is removed; initially by storage in special, loosely assembled stacks in the mill yard, later by heated kilns where almost all water is removed under scientifically controlled conditions. Shrinkage is very evident at this time since the wood is dried below the fibre saturation point. It is at this point, however, that most strength properties increase in the prolonged drying process. At this stage the lumber is still in the rough, large dimension pieces which will require additional resawing to bring the stock down to smaller, smooth sections.

Shrinkage and swelling in the direction of the grain of excellent wood is merely a small fraction of 1 percent from the green to the kiln-dried con-

dition and it is of little practical importance in most series of woods. At the completion of the drying process small checks in the wood structure may be detected for the greater length of the section. This is not necessarily an indication of fibre weakness. Rather it is an indication of an excellent drying process which protects a ladder structure against subsequent shrinking. These small checks serve as access mediums for the two applications of boiled linseed oil recommended by experienced ladder men. The oil fills the checks and wood pores so thoroughly near the surface that these are no longer visible to the eye.

Characteristics of Wood

The wood expert is interested in learning to recognize and identify natural characteristics and defects. Many of these are quite commonplace and require no elaboration here; some are prohibited completely, while the balance are tolerated in accordance with the degree they affect wood strength. For the guidance of the inspector the various wood characteristics are listed here. These are items which exclude woods containing such defects from those selected for ladder stocks.

A. Decay—Wood substances disintegrated by the action of cell-destroying fungi. Sometimes identified as "dossey" or "punkey." Discoloration is usually apparent.

B. Wane—That section containing bark or where the bark has slipped off. This occurs most frequently at the extremities of the wood piece.

C. Honeycombing—A type of check somewhat difficult to discern on the surface. Usually detected along the wood rays on the interior of the wood.

D. Shake—A separation along the grain, the major portion of which is between the rings of the natural wood growth.

E. Insect damage—This damage will vary with locale and the types of worms found. The flaws are classified as pinholes, powder-post beetle holes, and grub holes. The latter are probably the most destructive.

F. Compression wood — This growth occurs in softwood under abnormal conditions and is characterized by relatively wide annual rings, usually eccentric, and of a comparatively large portion of summerwood which merges into the springwood without exhibiting a marked contrast in color.

G. Check—A longitudinal separation of the wood, most of which occurs in the annual growth layers.

H. Density—The mass of a body per unit volume. It is an index of the amount of wood substance present in a piece, and, therefore, an index of strength.

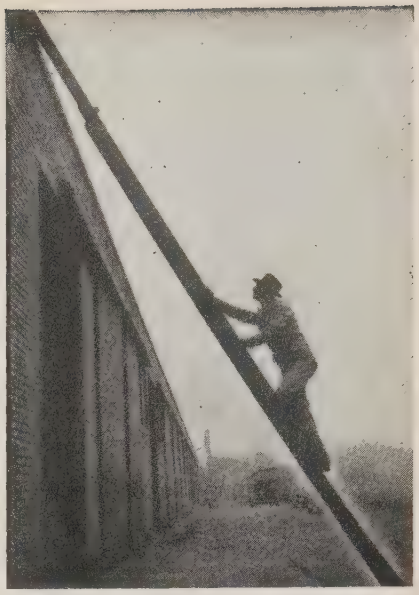
I. Compression failure—A pronounced deformation of the wood fibres due to excessive strain impressed on the growing tree by heavy winds, etc. This deformation takes the form of buckling fibres along the grain.

J. Pitch pocket—An opening between rings of growth which is usually filled with pitch, or a combination of pitch mixed with bark. Small pockets are acceptable in most instances.

K. Knot—The remains of a limb buried in the growth of a tree and later revealed by the sawing operations. Their acceptance in ladder stocks is determined by size, quality, and occurrence. Small knots of solid structure and scattered occurrence are not objectional.

L. Cross grain—This, as the term implies, indicates the slope across the grain or deviation of the wood fibres from a line parallel to the sides of the piece. The cross grain condition may be diagonal, or spiral, or both. Cross grain is limited in terms of its slope, which is established as the distance along the sides of the piece in which a deviation of 1 inch occurs. Expressed in another way—cross grain with a slope of 1 inch in 12 means that in a distance of 12 inches the grain deviates one inch from the edge of the piece. The slope of the grain is measured over a distance that will assure the determination of the general slope of the grain not influenced by local deviations.

(Continued on next page)



Man in picture above unwisely climbs this ladder improperly angled against the wall.

Broken rung marks this ladder unusable.

Makeshift ladder shown above is flagrant violation of safety and invites accident.

The "Safety Code for Portable Wood Ladders" of the American Standards Assn., defines the irregularities in wood that affect the durability and strength for stock intended for ladders. The restrictions on such natural characteristics are in accord with their effects on the strength properties.

Most ladder stock inspections are confined to an overall visual check, before and after fabrication. Most defects such as pitch pockets, knots, checks or slightly rotted sections are easily detected with the eye. This, however, is not true with such defects as cross grain, compression failures, shakes and honey-combing which require detailed examination.

Rot

Since wood decay is the most prevalent defect we shall devote additional attention to the subject here. The condition is brought on by the presence of fungi, or living organisms which thrive on wood substance. These fungi require favorable conditions for their development with respect to moisture and temperature, plus air. If any one of these is eliminated the development is arrested, if not completely eliminated. In spite of the popular theory of "dry rot," wood that is never wetted will not rot.

No method is known to accurately determine the weakening effect of fungi on wood fibres. Different types of fungi affect wood differently. The presence of incipient or advanced wood rot can usually be quickly detected by the presence of discoloration, pitting of the wood, or obnoxious odors. Molds and staining fungi are usually not critical with respect to strength compared to decay organisms. However, conditions that favor stains and molds are also ideal for the growth of wood-destroying fungi. Since decay even in early stages may greatly reduce some strength properties, stained lumber may well be excluded for ladder stock choice.

Ladders should be inspected frequently to detect possible evidence of damage to determine whether repair is needed, and whether they have become otherwise unserviceable. Good maintenance practice requires that the joints between steps or rungs and side rails be kept tight, that hardware and fittings are securely attached, and that movable parts operate freely and effectively. When they are rusted and hard to manipulate a judicious drop of oil in the right places will work wonders, and a little mineral paint over the hardware will add years of usefulness.

Painting Ladders

The question of painting ladders, scaffold planks, swinging stages and trestles is like the poor, always with us. It is such a simple deduction for the average person to make—you paint most all other lumber articles. Why not ladders and their associated equipment?

Practically all ladders are sold untreated, the exception being special items receiving extra treatment such as fire truck ladders, etc. The untreated state of the ladder makes it readily possible to conduct a thorough-going check of the quality of the wood and the manner in which the hardware is applied. Over-aggressiveness in the manner in which the riveting is done has condemned many an otherwise fine piece of workmanship. Many ladder users make a practice not to treat the wood at all.

This is certainly a mistake with such woods as Sitka Spruce, Noble Fir, Western Hemlock and Douglas Fir since they are far too soft to withstand the knocking about accorded them in daily use. This is especially true of equipment used outdoors such as linemen and contractors require. Untreated wood has a vicious way of developing long slivers that have been known to pierce several layers of heavy clothing as the ladder was carried on the shoulder.

For owners who wish to preserve and waterproof their investments there are several excellent finishes available. Probably the outstanding, though expensive one, is spar varnish for outdoor use. Next in popular demand is what some term "hard oil finish," or about two applications of boiled linseed oil, either dipped or brushed on. Shellac, with its limited resistance to water exposure, is relegated to in use only.

Many states forbid the use of opaque paints for ladders and allied equipment. The reasons are two-fold: the paint hides all the defects from the view of the user or inspector and the mineral and linseed oil combination develops something of a semi-impervious film on the exterior of the wood which excludes moisture under only the most ideal conditions. This means that under any continued exposure to wet conditions the water will penetrate, especially at the joints between rungs and side members, where rot is least desired. This same film that failed to exclude the moisture originally, now is slow to permit its escape and unsuspected rot occurs when least suspected. It's sheer fallacy to establish a ladder-painting schedule, as some firms do, since the new coat of paint merely adds concealment to a host of defects that would otherwise be readily detected by user or inspector. Painting itself does not increase durability or resistance to decay.

Ladder Testing

Much has been said and written about the art of "testing ladders." An old rule-of-thumb among many painting contractors has the boss jump on each flat laid rung with both feet to determine the soundness of the joint between ladder and side member. It is, of course, quite obvious that such an heroic measure can develop only one result: if the brutal test did not break the rung's fastening the obvious odds are that it will fail later, perhaps with disastrous results, as a worker reaches the top rung.

Then there is the old, old murderous technique of suspending the ladder between two raised objects and then jumping on its center. The mere fact that it does withstand the test by no means indicates a sound ladder. In fact all too fre-

For copy of booklet described opposite use Key # E-10 on card on page 77.

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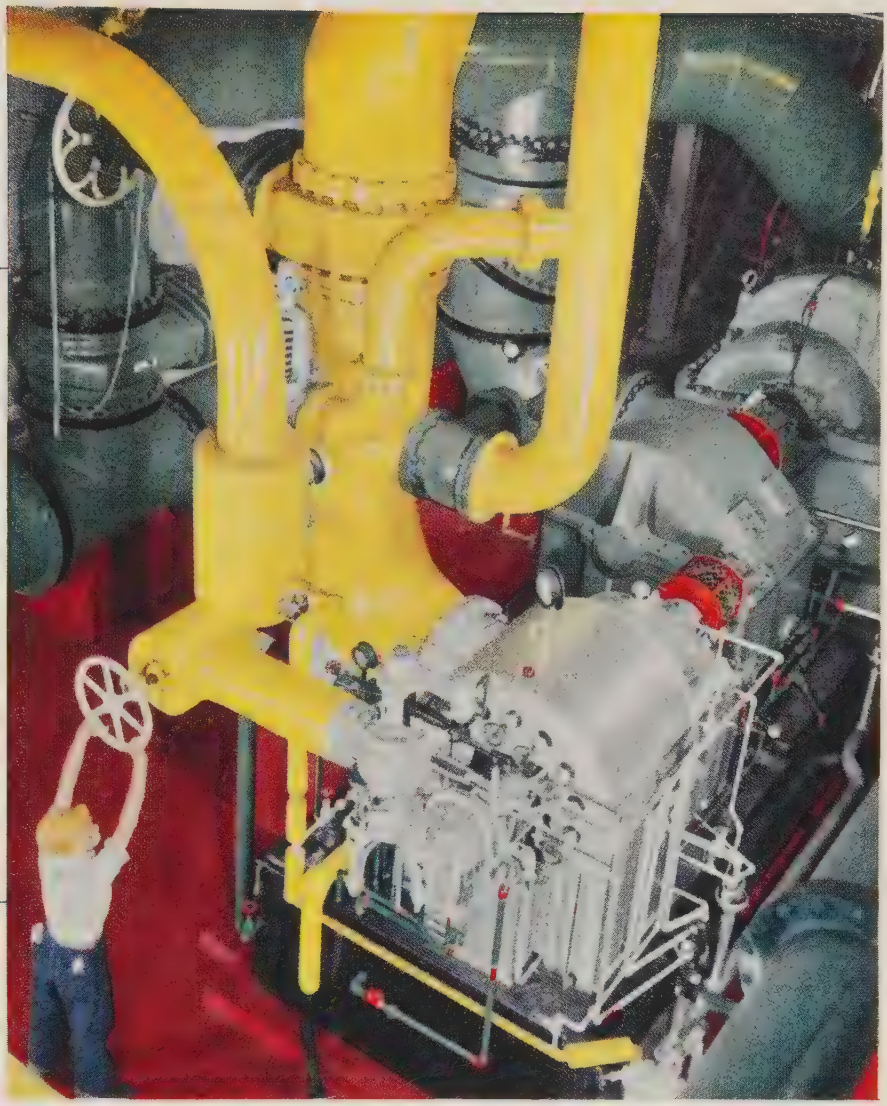

Forests of huge pipes in pump and boiler houses of J & L's Pittsburgh Works are easier to identify since pump lines were painted in dark green with black bands, and vacuum lines in yellow with bands of green and white.

BY MAKING workers more safety conscious, focusing their attention and minimizing fatigue, Pittsburgh COLOR DYNAMICS has helped to lower the accident rate phenomenally in the cold finishing department of the Pittsburgh Works of the Jones & Laughlin Steel Corporation.

During the time this department was painted according to ordinary shop practice, its best safety record was 1,027,000 man-hours without a lost-time accident. Since being repainted according to COLOR DYNAMICS, its safety record has zoomed to an all-time high of 4,858,579 hours. *An increase in safety of nearly 400%!*

"Naturally, we are very pleased with such improvement in our workers' safety," comments Superintendent Joe Seyler, of the mill's cold finishing department. "But we believe that this is just one of many benefits that have resulted from putting color to work the COLOR DYNAMICS way. By using eye-rest colors on stationary or non-critical parts of machines we have made these areas seem to recede. By contrast, moving or critical parts have been made to stand out. Our operators see their jobs better. With less eye strain there is less fatigue, and lessened fatigue results in more and better productivity.

"Eye-rest and morale-building colors on walls and ceilings have provided more pleasing surroundings that have enhanced the morale of our workers. They take pride in keeping their work areas cleaner and more orderly, thus simplifying housekeeping. And we get all these benefits without paying any more than conventional maintenance painting has cost us."

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quently the reverse is true since the ladder was never designed to carry such an abnormal load. The test may develop injuries in the form of compression failures that may be the source of sudden failure and serious accident in the future.

My advice is, therefore, **DO NOT TEST LADDERS.** According to reports of the U. S. Forest Products Laboratory, manufacturers and municipal fire departments frequently have applied tests to ladders. All had essentially the same objective, to apply a load equal to or greater than that which the ladder was expected to carry. And, although the ladders passed the tests at the time, stress during tests often caused permanent weaknesses that in time were direct causes of failures.

With wood ladders, for example, compression failures are the most common ones. They occur when the slender, tube-like fibres that compose wood are squeezed too hard lengthwise. These fibres buckle and are damaged by deformation of their walls. When a ladder rail is bent sufficiently, groups of these fibres buckle forming rather continuous lines on the surface of the rails. If a ladder is bent far enough obvious wrinkles will appear. Wrinkles indicate damaged wood fibres. When excessive loads are then applied to that section of the wood, failure or collapse occurs.

There are many more examples of tests administered to ladders by consumer groups but the concensus of opinion is still—**DO NOT TEST LADDERS.** A test may show a stiffness, but stiffness is not indicative of strength. It may reveal that the ladder can carry loads, and in doing so promote weakness of fibres. Learn to detect weaknesses by inspecting wood surfaces for fibre failures.

Single or extension ladders are not designed to carry loads when horizontally bridging a gap between two supports. This is the function of special staging material designed expressly for that purpose. The larger wood ladder manufacturer has them in stock in various sizes.

It is to be remembered that ladders are used for extraordinary duty at the owner's risk since the ladder will serve safely and well only if used for the purpose for which it was designed. The National Safety Council defines a ladder "as an appliance usually consisting of two side rails joined at regular intervals by crosspieces called steps in ascending or descending." The council recognizes twelve types of ladders in common use classified as stepladders, single ladders, extension ladders, sectional ladders, trestle ladders, extension trestle ladders, special purpose ladders, trolley ladders, side-rolling ladders, fire ladders, fixed ladders, and portable ladders.

Law of Gravity

When man moves at an elevation above that of terra-firma he immediately is in conflict with the law of gravity which means that if his support fails him, he falls, the severity depending on the height involved. Thus, the use of a ladder presents a variety of accident possibilities and requires definite planning and precautions, to be observed by all concerned with ladders. The procurement department must buy only from reputable manufacturers in the types and kinds best suited to the work intended. The inspector must scrutinize every inch for possible damage resulting from transit, and manufacturing defects that may have escaped the eye of the finished product inspector. The rest is up to the user on whom rests the responsibility for exercising good judgment in the use and care of the ladder through the years that it may serve.

ASA Press Code

(From page 11)

explain new terms used. A diagram is included to show suggested arrangement of control circuits discussed in the code.

A compilation of accident reports several years ago indicated the need for a national uniform code for controls and signaling devices for presses. The Printing and Publishing Section of the National Safety Council in 1951 asked the American Standards Association to establish a committee to work on a solution to the problem. Administrative leadership for the project was furnished by the Research and Engineering Council of the Graphic Arts Industry and the National Safety Council.

Cross Section Committee

The committee who developed B65.1 represents a wide cross section of interest in the project. National organizations who supplied personnel to serve on the committee included: Amalgamated Lithographers of America, American Newspaper Publishers Association, American Photo-Engravers Association, American Society of Mechanical Engineers, American Society of Safety Engineers, Association of Casualty and Surety Companies, Book Manufacturers Institute, Inc., Education Council of the Graphic Arts Industry, Inc., Folding Paper Box Association of America, Gravure Technical Association, International Association of Electrical Inspectors, International Photo Engravers Union of North America, International Printing Pressmen & Assistants' Union of North America, International Typographic Composition Association, National Association of Mutual Casualty Companies, National Electrical Contractors Association, National Electrical Manufacturers Association, National Printing Equipment Association, Inc., National Safety Council, Printing Industry of America, Inc., Research and Engineering Council of the Graphic Arts Industry, Inc., and the U. S. Government Printing Office.

Copies Available

The American Standard Safety Code for Controls and Signaling Devices for Graphic Arts Presses is available from the American Standards Association, 70 East 45 Street, New York 17, at 50 cents a copy.

Keeping up GOOD MAINTENANCE in a Woodworking Plant

The woodworking plant employee in the picture above is protected against accident by a guard which grabs boards from his band resaw and pushes them away from him . . . but he also needs good housekeeping procedures to fully protect him.

By LAWRENCE E. EISELE
Personnel Supervisor
Kroehler Manufacturing Company
Naperville, Illinois

UNDER WHAT CONDITIONS do we want to spend those hours that are spent at work? How do we want to keep the area in which we earn our living? If it is like our homes, orderly and clean, we certainly can spend those hours, even though they are working hours, in an enjoyable place where we are safe and happy.

In the first place, "What is good housekeeping?" All plants have janitors, supposedly enough in each department or division to keep the plant orderly and free of refuse and dirt. However, good housekeeping goes a little further than that. I think we can agree that good housekeeping means keeping your department in a clean, workable order that is conducive to favorable working conditions, good production, and high employee morale—coupled with safety!

Is it enough to think that the janitor will do all this for us? Can we rely on his daily routine to keep our departments and divisions in such good order? Perhaps some have found such janitors in their shops, but we have certainly been unable to find such competent men in ours. We have determined that it is a departmental job as well as an individual worker's job, or part of his job, to recognize good housekeeping. We at our woodworking plant, are interested in good housekeeping from the president of the company on down to the worker. As part of our company policy, housekeeping is given an important place in the workings of our organization.

Regular inspection trips by authorized personnel through the entire plant, with written reports on the observations made, and recommendations for improvements, are given to the works manager at regular intervals. These aid him in following up on lax housekeeping in any part of his line organization.

This subject is not new to us. We have been living with it ever since our plant was established, 60 years ago. It is certainly one of those things that you can never do without! Something you must live with! Since we recognize that we have to get along with this good housekeeping business we might as

well make it as easy as possible on ourselves.

Therefore, we have set up a weekly foreman's inspection report that is sent to the works manager, designating certain things that the foremen believe should be done in their departments to keep them in good order. Such reports are reviewed, and the suggested conditions are corrected; or the foreman is given an answer as to why such work should not, or will not, be done. In this way we feel the foreman will certainly go over his department before making out such a report.

He certainly will not say that the windows are all in good repair when 3 or 4 of them are broken. The assistant works manager goes through the plant at least once a week on a general tour and makes notes of areas that he feels are not up to housekeeping par. Reports and inspection generally keep our foremen on their toes in regard to housekeeping. We have a form we use for this foreman's weekly report.

Regular Inspection

This sounds as if we possibly have everything under control—with no problems; but we're all human and once in a while we'll get a report from the works manager that might say, "We're slipping on Housekeeping." This did happen. We decided some type of drastic action would have to be taken, but on the other hand we felt perhaps, some type of contest might be more in order, something to stimulate the foremen, something to give them a little more interest in this dull job of constant housekeeping.

Merit System Contest

So we did set up a contest for them, based on a merit system for good housekeeping, with 100 as a perfect score. The duration of the contest was 8 weeks. The 3 top scoring departments were given prizes for their efforts. At one of the weekly meetings with our foremen, it was explained that a housekeeping inspection would be made weekly by a member of the management group. This could be one of the superintendents, an inspector, personnel supervisor, assistant works manager, or possibly one of the engineers. A new form would be devised for each department with certain items listed and merit points established for such items. As an example, No. 1 might be: "Is the department clean of obsolete material, milk bottles, coke bottles, spoiled material, and so forth?" We might give that particular item a value of 6.

The Perfect Score

The second might be: "Are aisles clearly marked?" Another might be "Are materials and supplies stored neatly?", and another "Are window sills clean?"—Are all windows intact?, Is the desk and office clean and in order?"

Each one of these items would be given a certain value up to 100, the perfect score. The foreman would be asked to go through his department with the inspector so these conditions could be pointed out and corrected. The foreman had already sent in a weekly housekeeping report. If he had noted, shall we say, that he had one or two broken windows and we also found it on the inspection, he would be given credit for that point because we would assume that the maintenance department had not had time to correct the condition.

When put into effect this inspection certainly created a lot of interest. Since we were having foreman's meetings weekly, we reviewed the reports made of the inspection, as well as the reason why totals were changed according to the housekeeping report that was sent in by the foreman weekly. This created rivalry between the departments and produced the results which we were looking for. The interest in this contest permeated down to the employees through the foreman's efforts. I would say everyone became "housekeeping conscious" during those 8 weeks. We prepared a record of weekly results. We had it ready for the weekly meetings. At that time every foreman could see just where he stood in the contest.

After the contest was over, you might wonder what was gained by this housekeeping inspection system. We found that there was better cooperation between worker and management. Certainly, better working conditions resulted. A safer place to work was naturally the result because certain unsafe conditions were corrected. There was more working area available because obsolete equipment was not stored in the working areas. All employees and management experienced an all-round feeling of self-satisfaction and pride in a good-looking department.

From an address delivered at the 41st National Safety Congress.
Picture by courtesy of Weyerhauser Timber Company.

Nuclear Society Meeting

An organization composed of scientists and engineers engaged full-time in industrial, governmental and educational aspects of atomic energy activity. The American Nuclear Society, has announced plans for the first professional nuclear society meeting. The three-day session, which will coincide with the first annual meeting of the American Nuclear Society, will be held June 27–29 at Pennsylvania State University, State College, Pa.

The meeting will be representative of all major interests in peacetime atomic energy, according to J. A. Lane, director, reactor experimental engineering division, Oak Ridge National Laboratory, program chairman. Included will be papers on fast reactor technology, experimental nuclear techniques, radiation effects on biological and physical systems, sources and economics of reactor materials and nuclear chemical problems.

The conference has been specifically designed to appeal to engineers, physicists, chemists, life scientists and metallurgists, Mr. Lane said. Papers presented will deal with new and interesting data not previously

published in the nonsecret literature of the atomic energy field.

The meeting will be similar in concept, according to Mr. Lane, to the International Conference on the Peaceful Uses of Atomic Energy to be sponsored by the United Nations at Geneva, Switzerland, Aug. 8–20.

The meeting will be open to nonmembers, as well as members of the American Nuclear Society. There now are approximately 400 members of the organization. Detailed information concerning the meeting may be obtained from Prof. W. W. Miller, Pennsylvania State University, State College, Pa.

Editor to Address Midwest Safety Meet

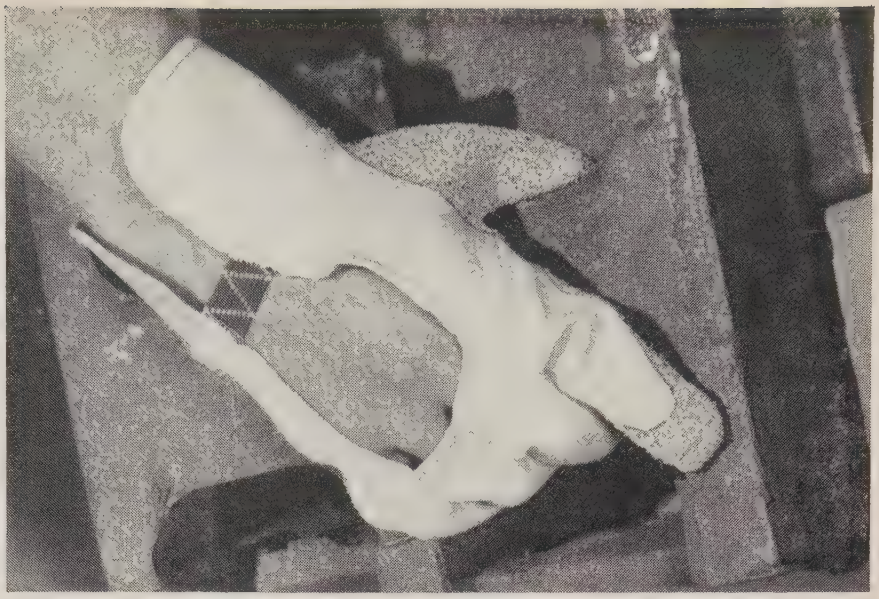
AMONG THE SPEAKERS at the 32nd Annual Midwest Safety Conference, sponsored by the Greater Chicago Safety Council, will be Harry Armand, Editor of *SAFETY MAINTENANCE* and the Safety Publications Division of the Alfred M. Best Company, Inc. Mr. Armand will deliver an address at the May 4th session in the Assembly Room of the Sherman Hotel in Chicago.

Design Engineering Show Postponed

THE DESIGN ENGINEERING Show, scheduled to be held in Philadelphia in May, has been postponed until late Spring in 1956, it was announced by Clapp & Poliak, Inc.

Although two successful shows have been held under the name of the "Basic Materials Exposition," it was decided late in January to expand the concept of the exposition and conference to encompass all aspects of design engineering. However, it was found that sufficient time was not available to arrange for the necessary changes by May of this year.

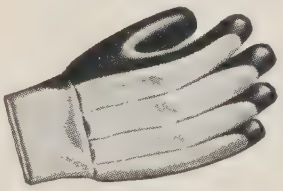
The 1956 event will be staged in Convention Hall, Philadelphia, and the Design Engineering Conference will be held concurrently with the show.



Cool Vent-Back Glove: Palm coated with sure-gripping, long-wearing, rough textured natural rubber.

Costs 40% to 70% less to protect hands with palm-coated gloves

Coated palms outwear canvas or leather palms. Fabric backs give comfortable ventilation.



NEOX No. 93

Handling sharp-edged materials, wet or dry: Palm-coated with NEOX (specially reinforced neoprene) which is unequalled for resistance to cutting and puncturing and does not absorb grease or oil. Job-fitted for handling such materials as strip and sheet metal.

Grappler No. 362

Handling abrasive materials, wet or dry: This Grappler glove is palm-coated with DUROX, a leather-like plastic that outwears ordinary plastics 50% and retains its grip when wet. Band top and knitwrist styles are also available in regular plastic coating. All Edmont plastic coated gloves have wing thumbs and best fit of any coated work gloves.

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Handling sharp, abrasive or slippery materials, non-oily: Grab-it type, palm-coated with rough-textured natural rubber which has remarkable non-slip grip, as well as long-wearing qualities on rough work. Available in knitwrist style, also.

Free Test Offer to Employers: Send brief description of your operation, materials handled and temperature condition. We will recommend the glove (palm-coated or fully coated) that best fits your application, and forward samples free of cost, for testing on-the-job. Our laboratory also develops special gloves for special applications.

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World's largest maker of coated industrial gloves, available through all leading industrial suppliers.

Edmont job-fitted gloves

(For details, use Key # E-11 on card on page 77)

FINALLY — He puts up rubber line protectors the "safe way" —from below. When he comes down he works the same way—taking off the "rubber" above him first and working his way down to the ground.

ONE MIGHT SUPPOSE that it would be unnecessary to make a plea for "full use of protective devices in electric line work." My contention is, however, that most of us fall far short of the objective of full protection. It is only by full use that we can eliminate the present needless and tragic losses among electric line workers.

Year after year, they suffer the greatest number of fatalities in the electric utility industry—about 60 percent of the total, or about 90 of the average 150 fatalities per year, based upon recent Edison Electric Institute figures.

Line work is inherently hazardous. The wires and devices which linemen work on regularly carry voltages which can kill. But, like other hazardous work, it can be made safe if the protective devices which have been developed are used. I refer to the usual rubber goods (line hose, insulator hoods and blankets) which should be used to cover conductors and equipment in the vicinity of the linemen; and to the principal items of protective equipment which should be worn by the lineman (rubber gloves, rubber sleeves and insulated hard hats).

These protective devices are inexpensive and can all be purchased "over the counter" in any quantity. With the possible exception of rubber sleeves and insulated hard hats, they are probably all in use to a greater or lesser degree by every electric public utility in the country. If they were used as they should be, few, if any, linemen would be killed or burned by electric shock. Yet the sad fact is that an average of about 110 electric utility workers, mostly linemen, are killed each year by electric shock or burns. Doesn't that indicate that we should do something about it?

Line Hose, Insulator Hoods and Rubber Blankets

Let's consider in some detail the use of these protective devices. First, the group commonly referred to as "rubber goods." These include line hose or "snakes," insulator hoods and rubber blankets. There are other special devices, but these 3 are the principal ones. They are about all that are needed to cover conductors, insulators, secondary racks, cutouts, transformers, ground wires, guys, telephone messengers and cables.

They should be used to cover all parts of conductors or equipment which the lineman might contact with any part of his body, by reaching, slipping or falling. They should cover primary, secondary, street light and ground conductors, and live or ground equipment. Remember that secondary or grounded conductors are just as dangerous as primary wires, because in nearly all shock cases on poles there is, in addition to the primary or live contact, a contact with ground or near-ground through which the lethal current leaves the body.

Remember also that no wire can be ignored and left uncovered on the assumption that it is harmless, as for instance a series street light wire normally "dead" in the daytime. Such wires are often crossed up with energized wires and are then as much of a booby trap as any wires on the pole. I have seen just that happen on our system, with needless fatalities resulting.

There is a right way to install these rubber devices. In general, from the ground up as the lineman climbs the pole, covering the wires and equipment from below, not from above. The nearest wires on

This Man Needs All the Safety He Can Get!

THEN—He completes the picture of what the safely-dressed lineman should wear with his non-conductive hard hat planted firmly on his head.

By F. G. HARRIMAN
Safety Manager
New England Power Service
Boston, Massachusetts

the arm should be covered first, then those farther out. •In this way he protects the area through which he is going to climb and in which he is to work. Conversely, when he finishes his work the rubber should be removed, starting at the farthest top wire on the pole. He should remove each piece from below, so that he always has protection in the area in which he is working.

One frequent source of trouble in connection with the use of line hose is the uncovering of too much of the wire to be worked on. Just because a wire is to be tied in, or a tap made to it, the entire wire does not have to be left uncovered. The safe way is to cover all but the few inches involved in the work.

Another detail often overlooked is the covering of short taps between line conductors, leads to transformers and cutouts, etc. Short pieces of line hose should be used for this purpose. Remember that a few inches of uncovered wire often provide the contact which kills or burns.

More could be said about the use of rubber goods on the pole, such as anchoring line hose so they will not slide and expose part of the wire;

NEXT—He puts on the all-important rubber gloves before he climbs pole. He does not take them off again until he is on the ground safely.

FIRST—Lineman dons rubber sleeves before mounting pole to protect against arm and shoulder contact with a possible live wire.

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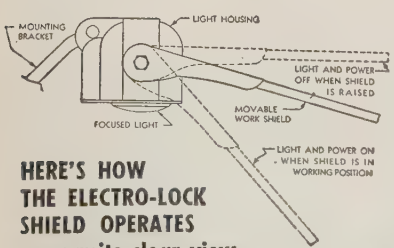
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LIGHT HOUSING
LIGHT AND POWER OFF WHEN SHIELD IS RAISED
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101 S. FLOYD ST.
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(Use Key # E-12 on Inquiry Card on page 77)

or use of double lengths of line hose where there is any chance of the man reaching beyond a single length, etc.

What I want to ask is the blunt question: "Do all linemen always do a thorough job in covering wires and devices on the pole?" Management must see that it is done by every crew, all the time. They must have plenty of line hose, hoods and blankets; and they must understand that (to paraphrase the Bell System motto) no job is so urgent that they cannot take time to cover up thoroughly.

Now let's go on to the next principal item of protection: rubber gloves. You may say: "Why talk about them? Of course all linemen use them." To which I will reply: "Then why do our industry records show that for the last 5 years an average of 26 men (mostly linemen) were killed by hand contacts each year?" Rubber gloves just don't fail in service. The answer is that these men were not wearing their rubber gloves; if they had been they would not have been killed. The reason, of course, is the great variety of so-called "rubber glove rules" in use in the industry. There are 5-foot rules, 3-foot rules, primary work area rules, "use- 'em-when-you-feel-like-it" rules, and many others. It is my observation and firm conviction, based upon over 25 years of close association with line work, that such halfway rules never have, and never will, protect the men.

In my estimation there is one simple solution and only one. That is the 100 percent or "ground-to-ground" rubber glove rule. If the rubber gloves and keepers are put on before the lineman starts up the pole, and not removed until he is back on the ground, he cannot receive a shock from hand contact. It is as simple as that. Any other rule under which it is left to his judgment when or whether he should put on his gloves is bound, sooner or later, to result in an error and a possible contact. We've seen it happen so many times that it isn't funny. "I didn't think I was so close to that wire." "I was just going to put them on." "I didn't suppose that brace was alive."

Why are these chances taken when the ground-to-ground rule will positively eliminate them? Don't let anybody tell you the ground-to-ground rule is impractical; that it slows up work; that the men cannot do certain operations with their gloves on; that it is bad for their hands; that it is hazardous to climb with gloves on. Over 23 years ago when we adopted this rule in our largest operating company, of which I was then superintendent of distribution, we had all these objections thrown at us; and experience has proved there was no truth in them. You will always get objections to change on the part of the men. That large company is still operating on the ground-to-ground rule and would not now consider going back to a part-way rule.

I realize that union agreements make changes, such as the adoption of the ground-to-ground rubber glove rule, sometimes difficult. But I believe that it is a clear duty to protect linemen; and that if the facts are laid before the union representatives they will go along. We have found that to be the case in many instances.

I am aware of the fact that the operating superintendents and even the safety representatives of some of the major electric utilities in this country do not agree that ground-to-ground use of rubber gloves is desirable. Some say that their conditions are different; they have greater than average clearances on their poles; or men always put on their gloves when they should. I know and respect the opinions of many of these "conscientious objectors"; and I am not suggesting legislating this rule, or even taking an industry stand as favoring it, since that might be embarrassing to them. I am merely stating my personal opinion, as strongly as I can, that full protection requires this rule. Anything else is only partial protection. With the ground-to-ground rubber glove rule in effect, and strictly enforced, power companies will have gone all the way to eliminate one of the chief hazards of line work.

The third principal item of personal protection for linemen is rubber sleeves; shoulder length rubber sleeves. These are not new, but they have certainly not been in general use. Their use is rapidly increasing, however, and I can show that there is a strong argument for their more general use.

Electric industry fatality figures show that for the last 5 years there was an average of 18 men (again mostly linemen) killed each year by arm or shoulder contacts. Next to hand contacts the arm is, as might be expected, the part of the body most vulnerable to contact in line work.

We recently analyzed our own system accidents for the last 17 years in electrical contact cases to discover the part of the body making contact. During these 17 years, we had a total of 132 contact accidents. Only 33 were hand contacts (demonstrating our increasing use of the ground-to-ground rubber glove rule), 73 were arm and shoulder contacts and the remaining 26 were body, head and foot contacts. The 73 arm and shoulder contacts make up 55 percent of the total in our experience. As a matter of record, 43 of the 73 resulted in no disability, 22 were lost time and 8 were fatalities. These facts indicated clearly to us that the arms and shoulders accounted for by far the greatest number of contact accidents on our system and demanded attention.

The accident prevention committee of the Edison Electric Institute became interested in this subject of arm contacts and the use of rubber sleeves 2 or 3 years ago, and sent a questionnaire to its members. Of 28 companies or systems reporting, 5 had a mandatory rubber sleeve rule which, in general required the use of rubber sleeves whenever rubber gloves were used. A recent check-up indicates that this number is increasing. An enlightening bit of information from this questionnaire indicated that in the non-sleeve-using companies from which figures were available, the arm contact cases were 22 times as frequent on a man-hour basis as where there was a mandatory rubber sleeve rule. *(Continued on next page)*

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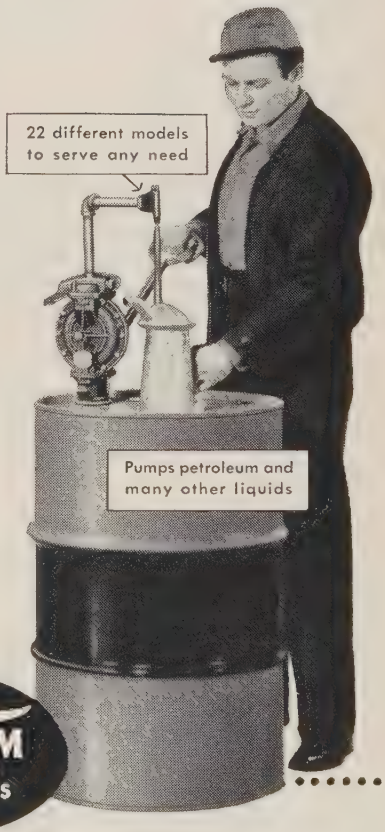

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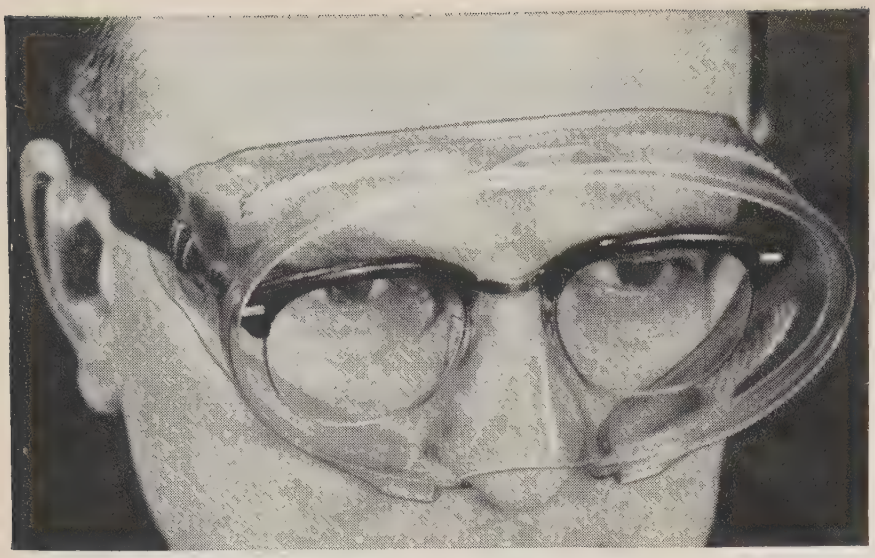

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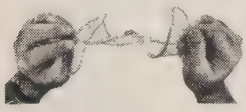
Pliable frame permits wearing for hours in comfort.



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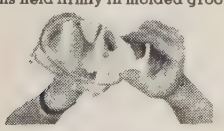

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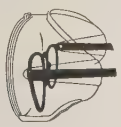

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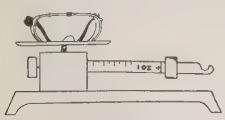

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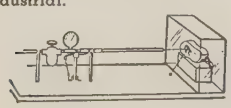

Workers who wear prescription glasses—even big plastic frames—are mighty glad to get the extra roominess provided by NO. 90A MONOGOGGLES. Its greater clearance results in utmost comfort.

Exclusive Willson features described at left encourage workers to wear these sturdy MonoGoggles. Note how large flat .060 plastic lens provides "picture-window" scope of vision—how the deep, transparent light green frame admits side vision while eliminating glare.

Ask your Willson distributor to demonstrate its unique protection against light impact hazards like those found in spot welding, buffing, woodworking and chemical handling. You have a choice of ventilated or non-ventilated frames, clear or green plastic lenses. Bulletin mailed promptly on request.

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(For details, use Key # E-14 on card on page 77)

Under the compulsion of these figures, we appointed a subcommittee of our system general safety committee to look into the use of rubber sleeves and to make recommendations. Our subcommittee gathered additional information from the 5 companies then known to have a mandatory sleeve rule, to determine, first of all, what kind of rubber glove rules were in effect and how generally they were using line hose and similar rubber goods on the pole. Their replies indicated that they were enforcing comparatively strict rubber glove and pole rubber practices; from which it would follow that their mandatory sleeve rule really meant pretty general use.

To be sure that we were not getting a run-around, a delegation from our subcommittee made a 2-day visit to 2 of these companies and watched several of their line crews at work. They were all using the full length or shoulder length rubber sleeves with rubber gloves. Their "rubbering up" of pole equipment was very thorough. Our visit was not known by the crews in advance. We talked with the men, asking in particular whether the sleeves were uncomfortable or hot in the summer. They admitted that they were hot, but said they were willing to put up with any discomfort because, by using them, they knew they were safe. We came back from this field inspection with the conviction that the use of shoulder length rubber sleeves was practical. The fact that these companies which we visited had used them 10 and 20 years, respectively, proved it.

Our subcommittee, therefore, recommended to our general safety committee that shoulder length rubber sleeves be worn on the same basis as rubber gloves. The general safety committee endorsed these recommendations. Our top management quickly agreed that the use of rubber sleeves was justified by the facts submitted, and approved such use on a mandatory basis wherever the idea could be sold to local management and union representatives. This was done last year in a number of our operating companies, with the result that this year about half

of our linemen are wearing rubber sleeves with rubber gloves on a mandatory basis. We have already experienced a marked decrease in electric shock and burn cases on our system this year, which I am convinced is due to the good start we have made in the use of rubber sleeves by our linemen.

Linemen's Insulated Hard Hats

Just one more item of personal protection for linemen: insulated hard hats. The old standard lineman's head gear of 40 years ago, the derby hat, has, alas, disappeared from the scene. Even felt hats, whose crown and brim give some protection by warning the lineman before he pokes his head into a hot conductor, are getting scarce. Caps seem to be the favorite head covering nowadays, particularly among the young fellows; or else they want to go collegiate and wear nothing above the ears. Seriously, this is a real hazard.

The encouraging thing is the increasing acceptance of the insulated hard hats made of plastic insulating material for linemen and groundmen. They are available—can be obtained from several manufacturers—have high insulating and mechanical strength—and are probably the best answer to the problem of preventing head contacts or injuries, both to the men on the pole and on the ground. Many companies have adopted them for use by the members of their line crews, and pictures of crews wearing them are appearing with increasing frequency in trade publications. We're giving them a trial in several of our own system companies, some on a mandatory and some on a voluntary basis. I have the temerity to predict that before many years they will be considered a regular item of linemen's protective gear.

I strongly recommend that companies do all in their power to secure full use of these recognized and available protective devices by electric line workers.

From an address delivered at the 42nd National Safety Congress.
Pictures by courtesy of New England Power Service Company.

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It's not the cigarette or cigar that's being smoked that causes fires — it's after they're discarded and forgotten that they become a serious fire hazard! SIPCO DUNKING STATIONS end this fire hazard by immediately drowning every last dangerous spark.
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"Sparky" reproduced through courtesy of N.F.P.A.
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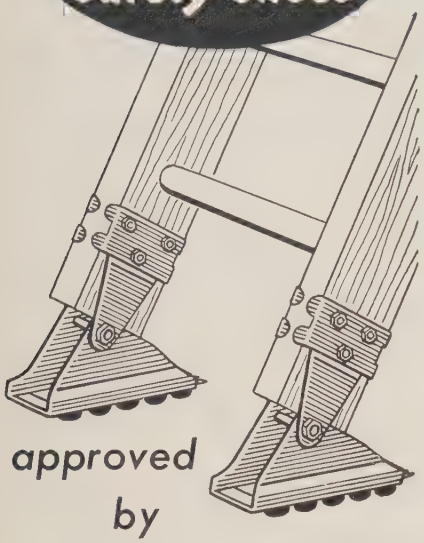
(For details, use Key # E-15 on card on page 77)

Dayton
safety shoes



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Your straight ladders will enjoy a firmer grip on the ground or on the floor with these popular Dayton Safety Ladder Shoes. Neoprene rubber suction treads really grip slippery floors — and — a simple turn and spike steel tips dig into the ground for real security and safety. The base is 16-gauge steel. Side plates are 13-gauge steel.

Lock nuts, spring washers assure precision adjustment. Treads are renewable. All zinc-plate finish.

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In Canada—SAFETY SUPPLY CO., TORONTO
(Use Key # E-16 on Inquiry Card on page 77)

SAFETY ACHIEVEMENTS

SEVERAL CATEGORIES of employees of the Salt River (Ariz.) Power District won industrial safety awards under a plan inaugurated by the utility and approved in March, 1954 by the Central Safety Committee. The awards granted cover the year 1953.

The highest Safety Award was won by the Cross Cut Machine Shop which coralled the Section Safety and No-Lost-Time Accident Awards by completing a year of 98,448 accident-free hours.

• • •

TIDE WATER ASSOCIATED OIL COMPANY'S refinery at Avon, California, has completed four million man-hours of work without a single disabling injury, it was announced in San Francisco, by Thomas O. Edwards, division manufacturing manager.

The Avon refinery, which employs 1450 men and women and operates on a 24-hour schedule, surpassed the previous accident-free mark of 3,973,204 man-hours for California oil refineries.

The present 17-month record which started on November 1, 1953, and is still continuing, has reached a total of 507 days.

• • •

FOR ESTABLISHING A SAFETY RECORD 89 percent better than the average for the entire plastics industry, Synthane Corporation, Oaks, Pa., has been awarded the National Safety Council's Award of Merit.

Statistics show the 1951–1953 average for the plastics industry to be an accident frequency rate of 8.6 with a .73 severity rate. Synthane's frequency rate for this same period was 4.0 with a .14 severity rate. An even more marked improvement was achieved during 1954 when Synthane's frequency rate dropped to 0.7 with a severity rate of only .01.

• • •

THE SCHEDULED AIRLINES OF THE United States set the best safety record in their 36 year history in 1954 as they transported an unprecedented 34,131,000 passengers. According to "Planes," official publication of Aircraft Industries Association, the scheduled airlines established a passenger fatality rate of just .08 per cent for every 100 million passenger miles flown. On April 18th Colonial Airlines, Inc., celebrated 25 years without a single fatality to passenger or crew.

• • •

PLANNED SAFETY AND A COOPERATIVE spirit on the part of the 360 employees of the two plants of Rollway Bearing Company, Syracuse, New York, has paid off in the completion of one full year of accident-free work. The safe year represents 650,822 man-hours worked.

Discussing the excellent safety record, Cecil C. Hilchie, company safety director cited the work of the foremen's committee which meets periodically with him to review the safety program and plan for continued safe work performance. Bulletin board safety promotion and a display which reports doctor cases

and lost time cases by department over a 5-year span help keep Rollway people up-to-the-minute on their safety life.

• • •

AVCO MANUFACTURING CORPORATION compiled the best safety record in its corporate history during 1954. Pace setter for the corporation was its American Kitchens Division in Connersville, Indiana, which had only one lost-time accident in 2,920,996 man-hours worked, for an average of .34 accidents per million man-hours.

Avco's overall average for the year was 3.35 lost-time accidents per million man-hours, against a national, all-manufacturing industry average of 11.5 lost-time accidents per million man-hours. All Avco divisions showed improved safety records in 1954 over 1953.

• • •

A WORLD'S RECORD IN SAFE OPERATIONS at a shell loading plant—more than five million man-hours without a lost-time accident—has been set by the employees of the Milan Arsenal in Milan, Tenn., during the past eleven months. Operated by The Procter & Gamble Defense Corporation, the Arsenal will receive the National Safety Council's award of honor and two top safety awards from The Procter & Gamble Company.

• • •

B. F. GOODRICH HAS AGAIN RECEIVED the National Safety Council's Award for accident prevention performance. The company's textile division, Martha Mills, Silvertown, Ga., also won an Award of Honor.

Winners in the National Safety Council rubber section safety contest included the company's plant in DuBois, Pa., for the eleventh time, the Research Center, Brecksville, Ohio, the Reclaim plant and the Works Technical laboratories in Akron, and the Port Neches plant of B. F. Goodrich Chemical Company.

Awards of Merit went to the B. F. Goodrich Akron plants as a group, to the footwear and flooring division, Watertown, Massachusetts, the Louisville, Kentucky, plant of B. F. Goodrich Chemical Company, and the Los Angeles plant of the Tire and Equipment Division.

• • •

THE DECATUR CASTING CO. HAS completed a full year of operation without a lost-time accident. The record represents a total of 109,360 man-hours and reflects the effectiveness of the company's "Safety and Hygiene Program."

A SAFETY RECORD UNPRECEDENTED in the construction industry—a full year without a lost-time injury—has been set by Du Pont Construction Division men at 34 heavy building sites in 15 states.

Working toward a planned and coordinated objective of 12 accident-free months, over 9,000 employees chalked up 7,000,000 exposure hours without a lost-time injury. Over 200 major injuries could have been expected during this period if the accident frequency rate had followed that of the construction industry as a whole.

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NOTICE THESE DOORS MUST BE KEPT CLOSED
BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
HELP KEEP THIS PLACE CLEAN
THINK ACCIDENTS ARE AVOIDABLE FORGET THE ALIBI
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WARNING CURRENT —ON—
CAUTION KEEP AISLES CLEAR

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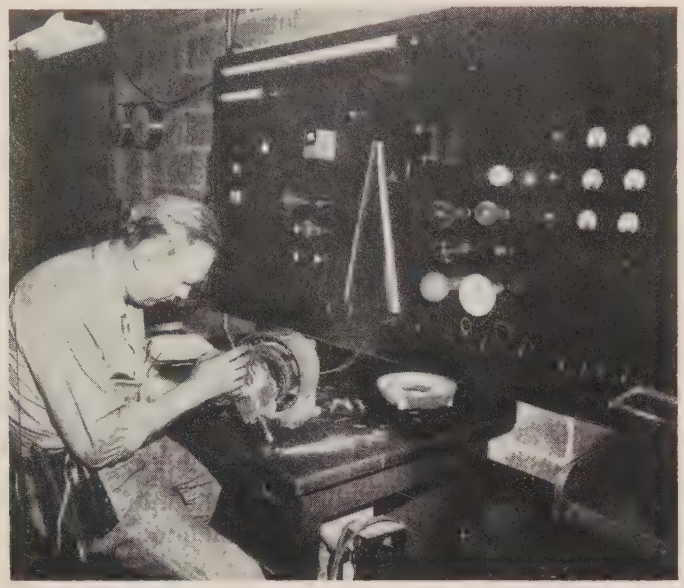
(For details, use Key # E-17 on card on page 77)

"Safety Maintenance" Salutes **A SAFETY IDEA**



Electrical Maintenance Testing Board

To cut down on manhours and repair costs, an electrical engineer and consultant, Bernard Eichwald, has produced an ingenious solution to the peculiar problems involved in adequately testing various electrical machines for industrial and commercial use. Mr. Eichwald, whose firm, B. Eichwald & Co., Inc., is responsible for the electric operation and maintenance of the United Nations buildings, among other projects, devised with his engineers, a means for accurately testing hundreds of different types of electrical equipment in use at the United Nations.

Specifically, the solution is in the form of an electric 4 by 8 foot rectangular test panel which is used to make laboratory tests on motors, heaters, incandescent lamps, relays, cold cathode lamps, fluorescent lamps, fluorescent lamp starter buttons, motor starters, clocks, batteries, bells, fire detectors, thermostats, fuses and switches of all types.

To an uninitiated layman the panel looks something like a device used in science-fiction books by Martian scientists. But, according to Mr. Eichwald, this panel is not supernatural. In the past 3 years of its existence it has proven of immeasurable value both in manhours and dollars saved, since equipment can be checked, tested, repaired and returned to service in a fraction of the time and cost to send it out.

Technically, the source of energy for the panel is a 3-phase, 4-wire 120/220 volts set-up with autrastats in each phase.

What It Can Do

Here are some interesting features of this panel:

Voltages of 1 to 220 volts may be obtained from the line directly, adjustments being made with autrastats. Higher voltages of 500 to 5000 volts may be obtained from built-in transformers. Voltmeters and ammeters are built in each phase and provide an immediate check of any equipment on test. (One ammeter and one voltmeter may be switched out of the test board circuit via a D.P.D.T. switch for any job that requires an isolated meter.) D.C. voltages of 1 volt to 250 volts may be checked on a built-in meter multiplier.

Capacitors of 400 mmf. to 40 mf. may be measured directly on a built-in bridge. Sizes of capacitors required for single phase motors may be determined by a switch meter capacitor arrangement permitting capacitors of various sizes to be switched in or out of motor starter circuits.

A multiple series lamp arrangement is provided for testing lamps, fuses and providing a low or high current series circuit for probing motor windings, relays, heaters, etc.

A tapped transformer is provided to supply circuits of 2 and a half, 5, 6, 12 and 24 volts. This circuit is equipped with a bell and buzzer for probing low voltage winding and continuity checks.

One, 2 and 3-phase twist lock outlets and pin plug outlets are provided on the board and may be switched for series or across the line operation.

Test probes are of the banana plug-in type with specially built heavy duty receptacles which permit leads to be pulled out quickly.

The test board is energized with a magnetic switch operated by a specially designed foot treadle which keeps the foot only 1/16 of an inch from the floor leaving both hands free to work on the unit under test. The entire test board is dead whenever the foot is removed from the treadle, thereby eliminating the possibility of the operator walking off and leaving live wires or equipment.

A 4-color wiring diagram is painted directly on the test board permitting even a person with elementary electrical knowledge to trace wiring of the circuit in use.

According to Mr. Eichwald, this test panel was designed specially to meet the vast electrical requirements of the United Nations. However, he claims there is no reason why such a panel cannot be adapted to industrial use.

Picture by courtesy of B. Eichwald & Co.

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(For details, use Key # E-18 on card on page 77)

SELF-STICKING SIGNS

A complete line of Self-Sticking Accident Prevention Signs in wordings and sizes recommended by ASA and NSA is now available from the W. H. Brady Co. Stocked in sizes 5"x14", 3¼"x14", 3½"x10", 5"x9", 2¼"x9" and 2¼"x4½". Stick to any surface. Are put up fast by unskilled help without nails, screws, tools. Write for 16-page Catalog No. 145-C and free usable samples.

Another Brady product, Self-Sticking Warning Stripes and Warning Checks in rolls, lets you mark any area fast with either diagonally striped designs or checkerboard designs. Applied right off the roll. Eliminate costly hand painting. Made of self-sticking vinyl plastic, acetate fibre and reflective "Bradylite." Stocked in 3 different color combinations in rolls of various widths and lengths. Write for Bulletin #143-A and free samples.

Manufacturer: W. H. BRADY CO.
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(Use Key # E-19 on Inquiry Card on page 77)

Poison ivy, poison oak and sumac no longer need bother your men when they use MSco POISON IVY OINTMENT for prevention or cure. Remember, MSco is *headquarters for poison ivy first aid:* Unit A-20 Zircreme, 6 per unit; Zircreme (clinical) 1 lb. jars; Unit A-17 Poison Ivy Ointment, 6 per unit; Unit 102A Poison Ivy Wash, 4cc., 6 per unit; Unit 164A Poison Ivy Wash, 10cc., 3 per unit. See your MSco distributor, or write for illustrated poisonous plant identification guide.

MSCO®

MEDICAL SUPPLY COMPANY

Rockford, Ill., In Canada, it's Safety Supply Co.
(Use Key # E-20 on Inquiry Card on page 77)

"What's the Law?"

Edited by
HENRY M. GROSMAN
Counsellor at Law, Newark, N. J.

Master Superior Court, New Jersey
Member
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10, Newark, N. J.

• • •

PARTNERSHIP—Wife Sues for Compensation even though Husband is Partner in Firm

CAN A WIFE who is an employee of a partnership composed of her husband and another individual, recover workmen's compensation from the partnership for injuries arising out of and in the course of her employment?

The New Jersey Superior Court has held that, despite previous decisions which held that a husband could not sue and recover workmen's compensation benefits from his wife, who owned and operated a business in which he was employed, because there can be no contract of hire between spouses; the employer in the present case is a partnership and the State Compensation Act declares that employers include "natural persons, partnerships, and corporations." Employee is defined as synonymous with servant and includes all persons performing services for another for a consideration, with certain exceptions, and no exception is made as to a wife of a partner.

At common law a partnership had no existence apart from its members who had to be sued as individuals on partnership obligations. However, partnerships have come to be widely regarded as separate entities in the business world and the legislatures and courts have made inroads into the common law doctrine. An employee of a partnership cannot be said to be an employee of an individual member thereof, as each partner has authority to engage employees in the ordinary course of business and to bind the firm in so doing. Such employees are employees of the entity and not of the individuals who form it. This has also been recognized by our courts.

Accordingly, under the present state of the law, a partnership is a jural person with whom a contract of employment may be had under the Workmen's Compensation Act, and petitioner's employment was not with her husband individually. She is therefore entitled to compensation.

The above case is an excellent illustration of the courts' and legislatures' continuing practice of enlarging the scope of workmen's compensation as the years progress. As a rule, most jurisdictions and the common law prohibited spouses from instituting legal proceedings against each other for a negligent act. Most workmen's compensation statutes contain the same prohibition, which included New Jersey until this recent decision.

FELICE vs. FELICE, N. J. Superior Court (Appellate Division, March 24, 1955).

Accident Arose out of Employment

AN EMPLOYEE, WHO WAS injured when an automobile crashed into the rear of a car he was pushing and crushed him between the two, was awarded compensation on the grounds that the injuries were sustained in the course of his employment.

The worker and another employee had gone at the request of their employer to change two flat tires on a truck. In order to inflate the tires, they took them to a nearby filling station. The owner permitted them to use his air hose. While they were

inflating the tires a car stalled in the station and the station owner asked them to help push the car away from the gas pumps and onto the highway.

The accident occurred a short time after they had started to push the stalled automobile down the highway. The Court concluded that the accident arose out of and in the course of their employment.

The court held that the assistance extended by the filling station operator was for the benefit of their employer. The courtesy they extended in return should also be in the course of their employment.

The employees had not finished inflating the tires when their help was requested. They had reasonable grounds to believe that, if they did not help push the automobile, the station operator would refuse to let them use the air hose. The court said that the fact that they were receiving requested assistance from the filling station operator at the very time and place they were rendering requested assistance to the station operator distinguished this case from "Good Samaritan" cases.

GUEST vs. BRENNER IRON & METAL CO., No. Carolina Supreme Court, Feb. 4, 1955.

Aggravation of Dermatitis

A WORKER had a pre-existing fungus nail condition which was aggravated by subsequent continuous submersion in benzine while performing his work. He was awarded compensation by the court under the occupational disease sections of the New Jersey Compensation Statutes. The employer contested the award, on the basis that the medical proof did not indicate that benzine would cause a dermatitis condition by itself. He also claimed the worker's condition at the present time was a result of his prior condition, which combined with the benzine to give him the present disability.

The court dismissed this contention by saying that the worker, under the amended Occupation Disease Statute, was entitled to an award for the aggravation of his original condition, even though the benzine might not by itself be sufficient to give him dermatitis. It was enough that the benzine had aggravated his already present dermatitis.

This case, of course, illustrates the established rule that an employer hires an employee subject to all his infirmities at the time of the employment. The employer's responsibility under workmen's compensation laws is such that if an employee with pre-existing diseases or injuries has an accident which aggravates the pre-existing disease and infirmity, the employer becomes liable for the aggravation, even though the accident would not by itself have caused any disability to a healthy employee. The necessity of pre-employment physical examinations by employers becomes quite compelling because of this rule.

GIAMBATTISTA vs. EDISON, 32 N. J. Super. 103, Appellate Division, 1954.

Simpkins suffered from heat fatigue–and his work was extremely poor.

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Morton Yellow Impregnated Salt Tablets come in a handy disposable dispenser. Plastic and heavy-duty aluminum dispensers are also available, as are plain salt tablets.

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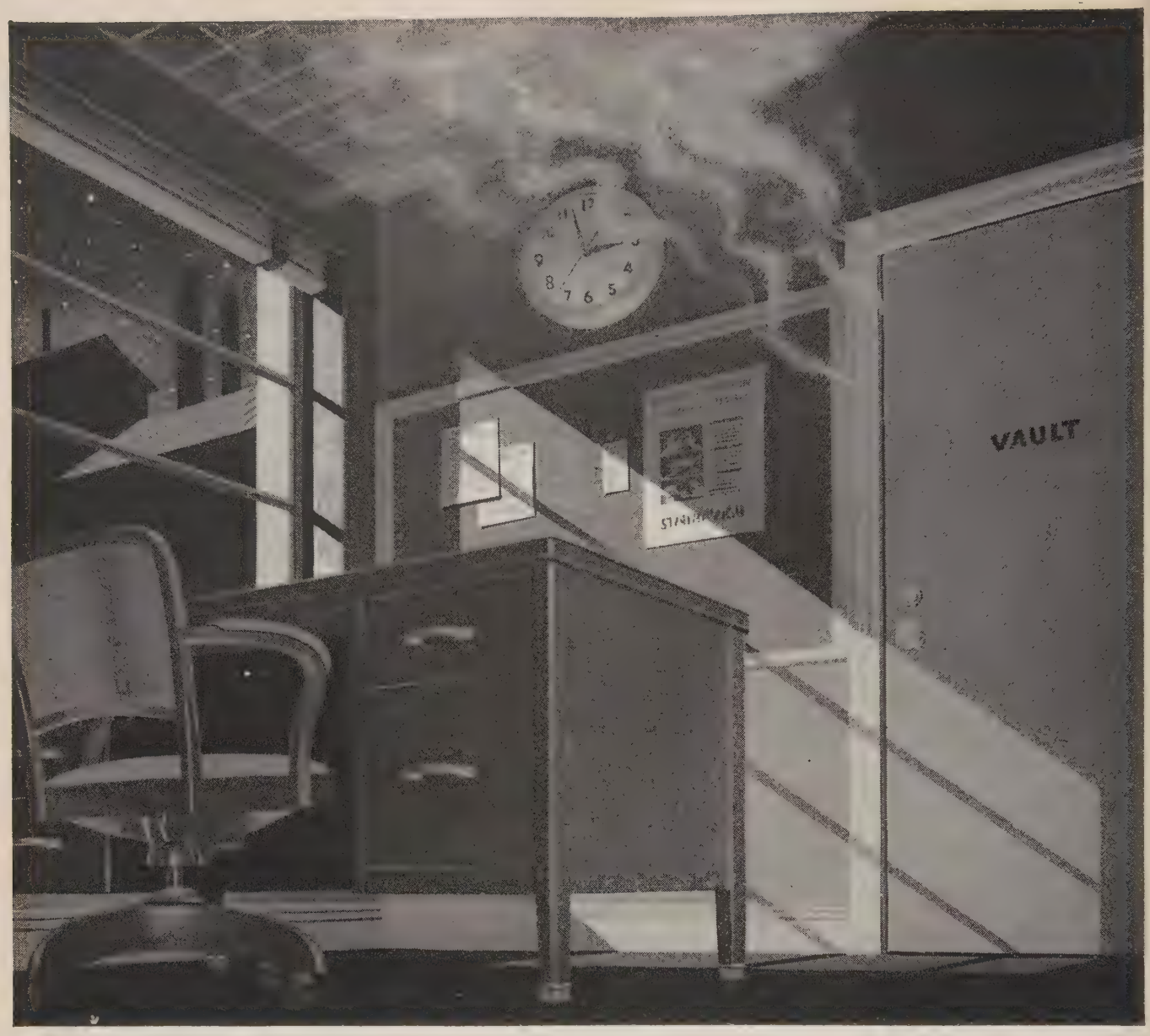
(For details, use Key # E-21 on card on page 77)



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(For details, use Key # E-22 on card on page 77)

The Fire Front

Standard Revisions

A COMPLETE REVISION of NFPA Standard No. 31 which outlines the safe installation requirements for all oil burning equipment from portable kerosene heaters to large manually operated industrial type burners, will be submitted for official adoption by the National Fire Protection Association at its Annual Meeting in Cincinnati on May 16–20.

In effect a new standard, the sweeping revisions of NFPA No. 31 as recommended should answer many of the problems for the safe use of oil burning equipment—particularly those of oil stoves tragically high-lighted in the past winter's news.

The NFPA Committee on Flammable Liquids has been at work on the new standard for over two and one-half years. The committee is made up of representatives of the oil industry, heating equipment manufacturers, fire departments and insurance interests from all sections of the United States and Canada.

Last revised in 1954, in part only, the new NFPA No. 31 treats such items as clearances to combustible construction, installation of fuel pipes, amount of air needed for proper combustion, draft requirements, tank installations including drums used for supply and storage, and construction and installation features for space heaters and cooking appliances.

It also contains an extensive list of definitions aimed at achieving a uniformity of terminology to clarify many of the misunderstandings now existing in the field both in the United States and Canada.

NFPA fire safety standards as approved by the general NFPA membership are purely advisory. However, they are widely used as the basis of state and municipal legislation and fire insurance requirements.

Several amendments to NFPA Standard No. 385, Tank Vehicles for Flammable Liquids, are also under consideration. This standard covers the safeguarding of normal petroleum products under normal conditions.

The standard was last revised in part in 1954 and the current amendments include: new specifications of aluminum alloys and appropriate welding processes for high strength welded construction of flammable liquid tank vehicles; also revision of the standard's section on protection against intermixing to prevent the possibility of gasoline being mixed with fuel oil.

A total of 12 recommended revisions in NFPA No. 58, Standards for the Storage and Handling of Liquefied Petroleum Gases, will be presented for official action at the annual meeting.

The revisions as proposed by the NFPA Committee on Gases will apply to odorization, use and storage of small ICC containers within buildings, specific permitted use of malleable or nodular iron for accessory equipment, and recognition of a tolerance upon setting of "maximum" start to discharge pressure of container devices.

Standard No. 58 has been adopted by most of the states, provinces and cities throughout the United States and Canada and by the National Board of Fire Underwriters. It was last revised in 1954.

The text of the current standard revisions are contained in the Advance Reports of the NFPA, available from its executive office, 60 Batterymarch St., Boston 10, Mass.

Metal Roof Survey

ROOFING MANUFACTURERS and companies were contacted in a survey recently by the Metal Roof Deck Technical Institute to determine what percentages of roof construction now in the planning stages are utilizing two-ply, one-ply or no vapor barrier build-ups.

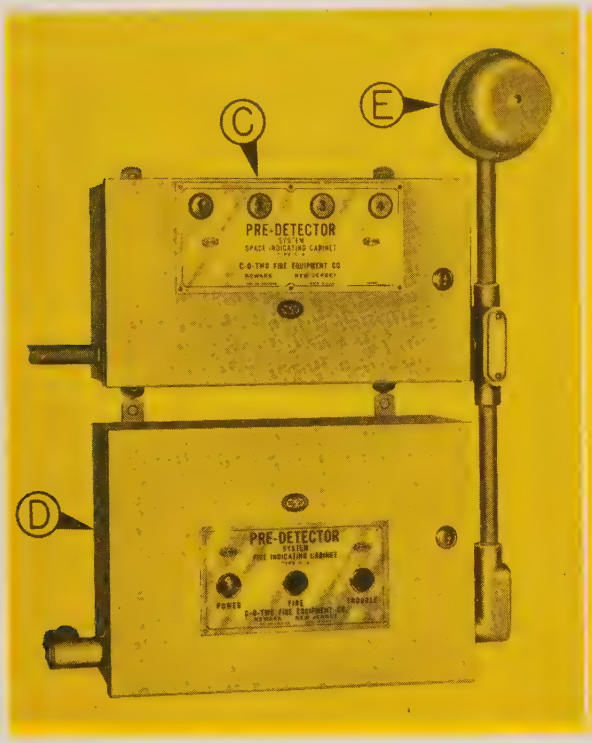
Results of the survey indicate that with rigid board-type insulations, two-ply vapor barrier build-ups constitute only 13.8 percent of metal roof deck construction and well over 50 percent of metal roof deck build-ups have either one ply or one mopping of pitch only.

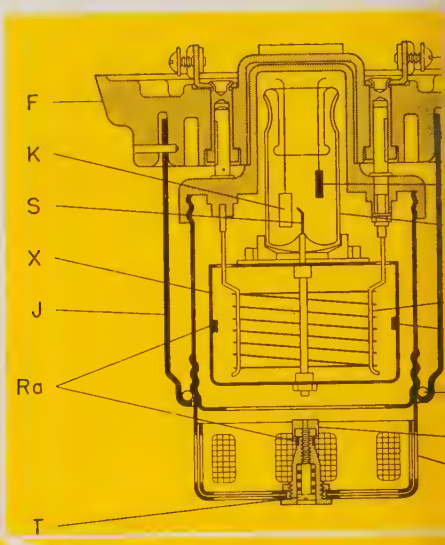
The two-ply vapor barrier consisting of two asphalt impregnated felts plus three moppings of pitch presents by far the greatest amount of combustible material between the non-combustible roof deck and the insulation.

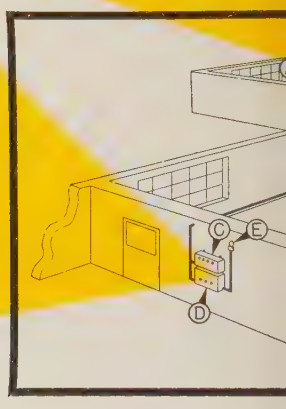
Although insurance companies have had favorable experience with non-combustible metal roof deck construction, MRDTI points out that the apparent trend toward the use of lesser amounts of pitch plus the increased development of non-combustible vapor seal will add further assurance to safe metal roof deck construction.

Quick - Sniff Detector

Electrical conduit and space indicating cabinet (C); fire indicating cabinet (D), and alarm bell (E) are supporting components of detectors. They work together to give visual and audible alarms for fire.







NUCLEAR ENERGY has entered the fire protection field. A radioactive element plays an important part in a revolutionary method of detecting fire in its earliest stages, and, although the new type of detector is sensitive to smoke, its actuation does not have to depend on either visible smoke, flame or heat.

The first evidence of most fires is generally the release of combustion gases. Then visible smoke appears, and finally flame and heat. In the past, fire detecting devices have been actuated by the relatively late manifestations of the fire: its heat (either fixed temperature or rate-of-rise thermostats), its flame (photo-electric), or its smoke (photo-electric). The new detector, however, carries fire detection a step earlier and reacts to the combustion gases as well as the later products of either smoldering or open fires.

The heart of the system is an overhead detection device electrically connected to a fire indicating cabinet. The idea for this detector unit is based on earlier European research on the ionization chamber principle of fire detection. Each detector-head contains a highly sensitive gas discharge (cold cathode) tube plus two independent ionization chambers, one of which is exposed to the atmosphere and the other closed to the atmosphere. In each of these chambers there is mounted a minute source of radioactive material, gold foil containing radium whose half-life is over 1,500 years. The alpha radiations ionize the air making it electrically conductive.

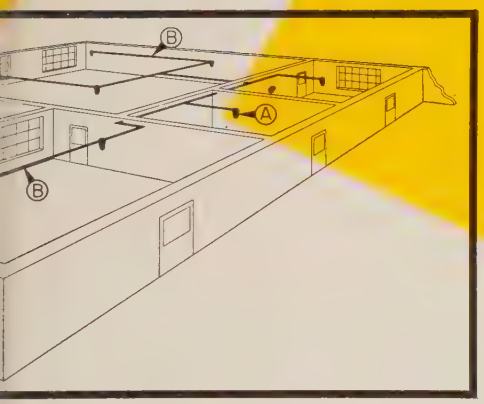
Each chamber is adjusted to give equal voltage under normal circumstances. However, when combustion gases or smoke are present, the balanced condition of the two ionization chambers ceases to exist. When the combustion products, either visible smoke or invisible gases, enter the exposed chamber, they decrease the electric current not only by absorbing some of the alpha rays but also, since their ions and electrons are much heavier than those of air, they recombine into neutral molecules which increase the resistance of the outer chamber.

When the two ionization chambers are no longer in

Scents . . .

Left-Detector cross-section:

O—chamber exposed to air
X—virtually-sealed chamber
Ra—radio-active material
SA—sensitivity adjustment cap
T—sensitivity adjustment screw
G—gas-discharge tube
A—anode
K—cathode
S—starter electrode
W—wire-grid electrode
J—locking shell
V—O ring
F—socket base
L—locking set screw
Y—terminal screws



Typical installation shows detector heads (A); connected by separate circuits (B) to space-indicating cabinet (C) and fire indicating cabinet (D) and alarm bell (E) to give warning.

balance, they cause the specially designed gas-discharge tube to become electrically conductive. This tube, in turn, operates electrical relays for either visible or audible alarm signals at a fire-indicating cabinet. This cabinet also has a supervisory trouble buzzer and light to indicate whether or not the equipment is in working order.

Not only does this detector discover fire more quickly, but a single detector head can protect a larger area. Under ideal conditions and with smooth ceilings, a single head is sensitive enough to guard up to 3,600 square feet of area. The unit is designed to be attached to a standard four-inch round electrical conduit box and as many heads as necessary for the space requirements can be connected in a single two-wire circuit to the fire indicating cabinet. The heads are spaced 60 feet apart and up to 30 feet from side walls. Each one can be

first Whiff of Fire

adjusted to its own sensitivity without affecting the others in the circuit.

In this pre-detector system developed by Pyrene—C-O-Two, a space indicating cabinet can be connected through separate circuits when it is desirable to know the location of the fire, with each circuit containing the required number of heads to cover the specified area. In this system set-up, as many as four separate circuits can be connected to one space indicating cabinet and four of these space indicating cabinets can be connected to the fire indicating cabinet, making a total of 16 separate circuits or spaces being handled by one system. The space indicating cabinet shows visually by number the area affected and it contains relay contacts which will shut down ventilation, operate an extinguishing system or perform other functions in the affected area.

In demonstrations of the new system, the response of the pre-detector head proved to be much quicker than that of other types of fire detecting devices. In one test, the new detector, a smoke detecting system, and a fixed temperature thermostat were installed in a fire-test building. A fire was started in a waste basket underneath a desk. The pre-detector head sounded an alarm in 17 seconds. The smoke detecting system required well over a minute; and the fixed temperature heat detector over three minutes.

The pre-detecting system has been thoroughly tested by Underwriters' Laboratories, Inc. and has received their approval. Its response to fire, either of a slow smoldering nature or a fast free-burning nature, is unusually rapid. Furthermore, low temperature or humidity have no effect on its operation, and heavy atmospheres containing dust, soot or cigarette smoke accumulated over several hours cause only negligible changes in the detector's sensitivity and will not set off the alarm.

The radiation sources in the ionization chambers are so weak that they are quite harmless to personnel.

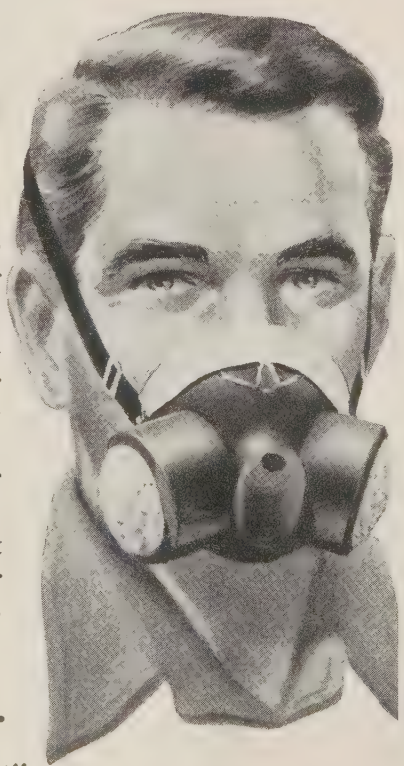
Pilot installations of the new systems have been made in a television station, a railroad signal tower, an electric power plant, a network analyzer room, two airline flight training equipment rooms and the offices of an insurance company. It is believed that this newest means of detecting fire will be suitable for practically any indoor location. Some of the suggested specialized uses include: merchandise warehouses, fur storage vaults, all kinds of electrical equipment, air conditioning equipment, aircraft hangars, racing stables, libraries, factories and homes.

With quicker methods of fire detection, industry and fire protection engineers can look forward to a reduction in mammoth fire losses, for the real answer to fires is discovering them early before they have a chance to become raging infernos and before large quantities of extinguishing agents are required to put them out.

Pictures by courtesy of Pyrene—C-O-Two.

Nose!
Throat!
PARCHED?
DUSTY?

YOU NEED . . .
Water-cooled
DUPOR No. 20



Double sponge filters, saturated with water before wearing, provide cool breathing even under hot, dusty or smoky conditions. Paint shops, foundries, steel mills, chemical labs, oil refineries, etc. have used and recommended this respirator for years. Regardless the industrial dust or fume hazard, here is an individualized air-conditioning unit that makes breathing safe for every worker. Get details! Sample sent $2.50 postpaid.

H. S. COVER, SOUTH BEND, IND.

"Respirators for Industry since 1894"

(For details, use Key # E-23 on card on page 77)

February Fire Losses Up

ESTIMATED FIRE losses in the United States during February amounted to $85,046,000, the National Board of Fire Underwriters has reported. This loss represents an increase of 7.8 percent from losses of $78,928,000 reported for February, 1954, and an increase of 13 percent from losses of $75,265,000 for last January (1955). These estimated insured losses include an allowance for uninsured and unreported losses.

Eye Program

(From page 16)

to our visual standard. I have in my file some very funny statements from professional eye specialists regarding an employee's vision. Some of these are very technical and require a highly trained specialist to understand the terminology. We have never made it a policy to dictate professional fees. We manufacture goods and set our own prices and feel that in this free enterprise system the same privilege should apply to our doctor friends.

Now what do the referrals to the eye specialist mean for our company? Most employees show some improvement. Over a period of years we find that 65 to 90 percent of the employees show improvement depending upon the department and the specific job classification. In the hosiery plant we had an immediate production gain from our referrals. In an important department such as the knitting department, we averaged 15 percent following referral. On an individual basis, it is almost impossible to ascertain the real value of the program. We have had as much as a 41 percent gain in productivity and earnings following a visit to an eye specialist.

For Example . . .

A few years ago we had an employee with 25 years of service in the hosiery plant referred to the eye specialist of her choice. Under our disciplinary procedure which we adhered to almost to the letter of the law, (it is customary to have standard procedures in dealing with unions) we found her production and quality so low that we were almost forced to discharge her or change her job. Upon her referral to an eye specialist, he found she needed glasses and prescribed them. The new glasses were so effective that the following week she had a 30 percent increase in production. Here is a concrete example in which the company was able to rehabilitate an employee with many years of service. We not only saved a valuable employee with a lot of skill and know-how but in addition we saved the cost of training her in another department. We saved training costs for the employee that would have replaced her. The costs of an overall industrial vision program is negligible in comparison to

A MUST

in every factory wash room and on-the-job locations

VI-LAN CLEAN powered with

ACTAMER* for Dermatitis Control

For easy filling of dispensers VI-LAN CLEAN is furnished in polyethylene bags thru which you may squeeze all or as much as is needed into the dispenser without waste. The bag may also be used as a portable dispenser on trucks and outside jobs. VI-LAN CLEAN also is available in convenient pint, quart and gallon containers for home and shop use. Write NOW for descriptive folder.

- ACTAMER* is a new bacteriostat of superior effectiveness, and tests have shown that VI-LAN CLEAN with ACTAMER reduces resident skin bacteria by as much as 97%.
- VI-LAN CLEAN does what soap can not do. It cleanses while it guards hands, face and body against skin contaminations. It removes greases, oils, paints, acids, printing inks, asphalt, rubber and gasket cements. It is non- irritating. It contains lanolin to restore normal skin qualities. It may be used with or without water.
- For safety sake, for cleanliness, to prevent lost man hours, absenteeism and expensive compensation claims, give your employees the protection of VI-LAN CLEAN.
- Place VI-LAN CLEAN dispensers in all wash rooms and in critical on-the-job locations, to economize and to speed your employees wash-ups.

DAMERON enterprises, inc.
427 So. 20th Street
Louisville 3, Kentucky

(For details, use Key # E-24 on card on page 77)

what it saves in training costs, lost time, turnover, absenteeism, etc. Our experience has shown that the cost per year averages about one dollar per employee. This includes cost of the instrument, refraction costs, supplies, labor costs, and clerical employees to maintain records etc. It does not include the cost of safety eye wear. In regards to this matter we have worked out a very reasonable mutually satisfactory deal with one of our eye specialists whereby he supplies us the eye wear at cost plus refraction fee.

We routinely retest employees every year. We are happy to retest an employee at any time, at the request of the employees or their supervisors. Our supervisors make these referrals during the course of the year as they have found it invariably true that poor production and poor quality workers need professional eye attention.

A word of caution is needed here about the timing of the installation of any human relations program. We have found from experience that it is almost impossible to install any human relations program effectively during times of negotiations. During negotiation periods employees are very itchy and feel that any company move has an ulterior motive behind it. Where employees normally volunteer for testing, it is difficult to obtain the same voluntary cooperation during these times. For some reason or another the unions feel that management will use test results to get rid of sub-standard employees and use it as a wedge for wage negotiations, etc. In one plant we had a vision program in effect for 7 years and had excellent cooperation with the employees. Somehow the rumor started that we were going to tie eligibility and promotion for better jobs with our vision standards. We had very few volunteers during this period.

POSITIVE PROOF!

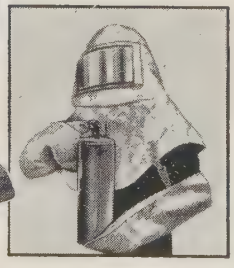
New, Patented* Rescue Suit Protects Wearer In 2500° radiant heat . . . permitting complete freedom of action and providing extra safety.

FYRE-ARMOR

- Reflects more than 95% of all radiant heat.
- Body temperatures remain NORMAL under Fyre-Armor.
- Light-weight Fyre-Armor protection offers complete mobility.
- Developed after years of research.
- Amazing record of successful use by municipal and military fire fighting departments and airport crash stations.

Now available here for the first time, after years of exhaustive research. Light-weight, absolutely flexible, FYRE-ARMOR Rescue Suits weigh no more than an ordinary suit or coat.

Unusually fine fire-resistant fabrics are fused by a patented process to metallic layers and then topped by specially treated durable aluminum foil which provides a higher heat reflectivity than any other process of aluminization. Special copper coated heat resistant safety goggles and visors offer full 180° visibility to round out the versatility of amazing FYRE-ARMOR.



Other models include a Fire Proximity suit for use by Fire fighters who work in the immediate vicinity of flame only and are subjected to high heat radiation; the FYRE-ARMOR FM Hood and special equipment for firemen who do not require a complete protective garment. Industrial suits and a full line of industrial apparel including face shields, vests, aprons, gloves and legging-spats for workers who are exposed to high heat and flame. FYRE-ARMOR special equipment includes drop curtains, tarpaulins and blankets to shield inflammable materials and for rescue work.

* Patented in Europe Pat. Pend. USA

At no cost FYRE-ARMOR safety engineers will survey your requirements. *Write, wire or phone today* for full information.

FAR-EX CORPORATION
75 West Street, New York 6, N. Y.
WHitehall 3-5296

(For details, use Key # E-25 on card on page 77)

What results should we expect from an industrial vision program?

1. Increased efficiency.
2. Rehabilitation of currently employed personnel.
3. Quality production increase and bad work decrease.
4. More regular attendance.
5. Less turnover. Employees who are "eyefully" unable to do the job often tend to quit.
6. Clinic visitation reduction.
7. Discovery of those people who not only have visual problems but have physical disturbances such as goiter, tonsils, etc.
8. Selection of those employees who are less accident prone.
9. Better employees selected for specific jobs.
10. Considerable reduction in training costs and training time.
11. A more ready acceptance of safety eye wear.
12. Stimulated personnel activities.
13. Turning down on a scientific basis unfavorable applicants, who feel that they have been given fair and equitable consideration.
14. More reliable employees selected.
15. Proper selection techniques to place employees returning from service.
16. Better human relations within the plant.

17. Some union agreements call for promotions and transfers on the basis of seniority and qualifications. Many arbitrators have upheld that testing as an aid to determining qualifications is a sound management technique. It is much easier for a company to explain its position to an arbitrator armed with scientific data rather than arm chair opinion. Most arbitrators recognize management's right to establish qualification standards which may include psychological testing, physical examinations, and visual standards.

A complete selling program for industrial vision includes more than purchasing the instrument and installing a proper operating procedure. There are many other visual problems that may be added to the program from time to time. The use of a tachistoscope is a useful training and screening aid. It determines those people that can see quicker than others. From the safety factor it is reasonable to assume in certain job operations that there will be fewer accidents if employees can see more quickly than others. At the same time those employees in some operations who can see more quickly than others can produce more and inspect more. Recently we found that every employee in one department who could see 5 digits at a 25th of a second were all rated good, while those employees that could not see 5 digits at the same speed were all rated poor.

It is vitally necessary to follow up on the program from year to year. To have a virile vision program depends upon the initiative, ingenuity and constant vigilance you give it to keep it alive.

From an address delivered at the 41st National Safety Congress.
Picture and charts by courtesy of Bausch & Lomb.

THOSE IN THE KNOW
. . . PREFER
Install K-LENS-M Lens Cleaning and Anti-Fogging Stations for clean, clear vision . . . for all types of safety eyewear, glass or plastic.
More Efficient—Lower Cost
Send company letterhead for FREE sample and complete information.
K-LENS-M
REG. U.S. PAT. OFF.
The Acknowledged Leader in the Lens Cleaning Field
The WILKINS Co., Inc.
Cortland 2, N. Y.
(For details, use Key # E-26 on card on page 77)

Welding Conference

A WELDING CONFERENCE, the first to be held on a national level, has been added as another feature of the National Spring Meeting of the American Welding Society and the concurrent Welding Show to be held at Kansas City, Mo., June 7 to 10.

The addition of the conference brings the total number of major events planned for the four-day meeting up to eight. Advance registrations indicate that attendance will be the greatest in the 36 year history of the society.

The welding conference will feature case histories and informal, panel discussions. It will be held in addition to the technical sessions of the Spring Meeting, where formal papers are read. The schedule for the conference includes a practical welding clinic, welding of plastics, and automation in the welding industry.

The exhibits and the conference will be staged at the Kansas City Auditorium, other events at the Hotel Muehlebach. Hotel arrangements may be made by addressing the American Welding Society, 33 W. 39th St., New York 18, N. Y.

B R E C K

p H 7 P R O T E C T I V E C R E A M

Breck pH7 Protective Cream covers the skin with an invisible, oil-resistant film which is neither slippery nor sticky. This neutral film prevents contact of irritants with the skin. Breck pH7 Protective Cream is effective against such irritants as lubricating oils, grease, aromatic and hydrocarbon solvents, cutting compounds, synthetic resins, rubber dust, fiber glass, paint, duplicating inks and iron dust. Breck pH7 Protective Cream is easily removed with Breck Hand Cleaner or with soap and water, making the use of harsh cleansers unnecessary.

A Breck Industrial Preparations Booklet will be forwarded to you upon request.

JOHN H BRECK INC · MANUFACTURING CHEMISTS · SPRINGFIELD 3 MASSACHUSETTS
NEW YORK · CHICAGO · SAN FRANCISCO · OTTAWA CANADA

(For details, use Key # E-27 on card on page 77)

Industrial Hygiene

Handling Radium

THE SERIOUSNESS of recent personal injuries and the size of property damage claims resulting from accidents with radium-filled capsules being used in commercial and laboratory work is the basis for a special bulletin issued by the Special Hazards Committee of the Association of Casualty and Surety Companies' accident prevention department.

Listing two theft cases where amputation of the injured man's hand or leg was necessary and several where severe property damage resulted, the bulletin outlines the following steps which should be taken to safeguard against further mishaps with the powdered radium most commonly used in medicine and industry:

1. Personnel assigned to handle the tiny capsules should be advised of the dangers involved and the necessity for great care in their use.

2. The use and storage of containers should be under effective supervision so that the location of all containers is known at all times. It is preferable that capsules be kept under lock and key when not in use and that a constant inventory be maintained.

3. Equipment used to handle the capsules, especially mechanical equipment, should be designed so that the containers are not subjected to shocks and jarring movement.

4. Measuring equipment should be available for detecting unusual radiation conditions such as those resulting when a container is lost or broken. Meters that respond only to beta and gamma radiation are unsatisfactory and may give false readings of the amount of radiation present. Alpha meters, while more difficult to calibrate, give a truer picture.

5. Containers of all types, i.e., glass or very thin metal such as platinum or aluminum, should be checked regularly to eliminate the possibility of undetected leakage.

6. Personnel should be instructed in proper procedures to follow in case a capsule is broken so that contamination will not be spread.

7. Personnel should know whom to contact in the event of loss or breakage of a container.

The bulletin, issued by the Special Hazards Committee of the Association of Casualty & Surety Companies, also lists five basic rules to be followed if a radium emergency should arise:

1. Do not attempt to clean up the spill.

2. Close all windows, stop ventilating equipment and leave the room immediately.

3. Remain in the close vicinity of the exit until a radioactivity check can be made of shoes, hands, clothing and equipment. The check will prevent spreading of the contamination.

4. Lock all doors and seal all cracks, from the outside of the room, if powdered or gaseous sources of radiation are involved.

5. Contact a consultant experienced in radiation hazards. Decontamination of persons, buildings and equipment should be conducted only under qualified supervision.

While radium is being replaced for many uses by radioactive cobalt and other new radioisotopes, the safety rules listed apply to those materials also.

Lost or Stolen

Principal cause of concern among radium users is that a capsule will be lost or stolen. Since the material is so valuable and the container so small—often less than an inch in length and a sixteenth of an inch in diameter—it offers great temptation to thieves. The usual result of such theft is severe injury to the thief, frequently after only very brief exposure.

In cases of loss or misplacement, the bulletin says, the capsule is most frequently found either in the same room where the loss occurred or in a trash pile, incinerator or sewer. The radium is often found if a search is started immediately after the loss is discovered and is directed by an experienced radiation man.

Job Placement Service for Industrially Injured

A SPECIALIZED PLACEMENT service for compensation claimants has been added to the rehabilitation activities for the industrially injured at the Institute for the Crippled and Disabled, 400 First Avenue, in New York City. The new service provides carriers and claimants with specialized job placement either as part of a comprehensive rehabilitation program or as a separate service.

According to Mr. Willis C. Gorthy, Institute Director, compensation insurance companies may refer claimants for job placement alone or have it included as part of medical, psycho-social and vocational programs. Mr. Gorthy said that the new service was established in response to requests from among the more than 100 compensation carriers now referring cases to the Institute. The job placement contacts developed by the Institute on behalf of its other patients will be utilized as part of the new effort.

A new position on the Institute's staff, "Compensation Claimant Placement Officer," has been created. It will be filled by Mr. Charles E. Callan, whose background and experience is in the job placement of the disabled, particularly those who are the victims of industrial accidents.

The new placement service for the industrially injured is one of many specialized activities which the Institute provides to compensation carriers and claimants. In addition to comprehensive rehabilitation programs, the Institute also provides Preliminary Rehabilitation Survey facilities to help carriers determine the feasibility and extent of rehabilitation for specific claimants. Miss Arpie E. Shelton is the Coordinator of all compensation insurance activities at the Institute.

N. Y. State Radiation Code

PROVISIONS OF projected regulations of the State Labor Department to protect New York State workers against dangers stemming from industrial use of atomic isotopes and other radiation have been announced by Admiral William S. Maxwell, chairman of the Board of Standards and Appeals. Industrial Commissioner Isador Lubin has estimated that 150,000 workers are employed in jobs where radiation hazards exist.

"These regulations, which will have the force and effect of the law once they are adopted by the Board of Standards and Appeals, will also enable the Labor Department to cope with the special challenge of the atomic age to worker safety in the expanding future," said Commissioner Lubin.

"The proposed regulations cover everything from shoe store fluoroscopes to isotopes used in industry. They will include uranium mines if any are developed in New York."

Radioactive materials are used in industry today mainly in printing plants, dial-painting, shoe stores, veterinary hospitals, plants where industrial x-ray equipment is used as an inspecting device, during the handling of radium, and by research organizations.

Significant provisions of the draft made public by Admiral Maxwell include:

(1) Balancing the amount of protection required against the degree of hazard, by setting up adequate standards but avoiding inflexible details that could either fail to cover new conditions or hamper future development. Radiation sources will be classified by type of equipment, and by areas of degree of hazard in applying these standards.

(2) Special regulations, for shielding by lead or otherwise; for safe exhaust ventilation systems where loose radioactive materials are used; and for control of personnel contamination.

(3) Setting up definite permissible weekly dose limits of radiation. An alternative quarter-year plan of permissible limits is also offered.

(4) Registration of practically all installations that come under the labor law in New York State where radiation sources are manufactured, stored or utilized. Certain prescribed installations with minimum hazards are exempt from this rule.

(5) Emphasis on education of workers and qualifications of supervisory personnel in an attempt to control exposure to radiation. Workers will be required to wear film badges where needed.

(6) Requirement of protection surveys by employers on every installation in the State in order to give the Labor Department access to complete information on every potential radiation hazard. The initial survey must take place within one month after registration.

(7) Keeping complete radiation records of individual workers in the plant.

(8) Labelling of equipment with prescribed warning symbols and signs.

(9) A section on portable sources of radiation.

The proposed code is the result of efforts by a twenty-six man advisory committee composed of representatives of management, labor, the medical profession and State agencies, which started work in March 1953. After the Committee's report was sent to the Industrial Commissioner for approval, he submitted the proposals to the Board of Standards and Appeals.

After review by the board, public hearings are held, as required by law, in the principal cities of the State, giving all interested parties an opportunity to discuss them. When finally approved by the Board, the rules have the force and effect of law. Copies of the draft can be obtained by writing to the Board of Standards and Appeals, 11 North Pearl Street, Albany.

THE PROBLEM OF HEAT FATIGUE is not a new one. The Bible mentions the symptoms of heat cramps in the eighth chapter of Jonah. Campaign records of Frederick the Great indicate his soldiers suffered from the same symptoms. Gold miners in the Rocky Mountains of our western states were no exception.

During the past fifty years, with the great industrial expansion that has taken place, more and more men have been employed on "hot jobs"; i.e., steel mills, blast furnaces, factories, foundries, mines, etc. With this expansion, the problem of heat fatigue, its causes, and its cures became more pressing.

Checking Up . . .

Medical science began checking. They looked into these symptoms which began with extreme lassitude and a loss of will to work in the early stages and progressed to a point where the effort to work became more and more forced; severe dizziness occurred and was followed by muscular spasms and sharp pains.

In 1925 Colonel R. J. W. Oswald, Chief Medical Officer of a gas company in Britain, wrote a letter to *The Lancet*, a medical publication there. He told of the abdominal cramp and exhaustion experienced by employees in retort work at the gas company. The problem became so serious that he introduced a "saline drink" for the stokers. The colonel had realized that loss of salt from the body during periods of excessive perspiration might well be the cause.

Colonel Oswald summarized the results as follows: "Since the drink has been introduced, cramps have been eliminated and a great sense of well-being at the end of each shift has been obtained. Incidentally, the sick rate has been reduced. . . ."

In this country the Youngstown Sheet and Tube Company cooperated with other organizations in bringing a group of specialists from Harvard University to Youngstown, Ohio in 1934 to study its heat cases.

The work showed that adding a teaspoon of salt to a gallon of drinking water was enough to keep the body salt at the necessary level. Salt also made it possible for the body to hold the required amount of water. The men who drank plain water weighed, at the end of the experiment, an average of 5.6 pounds lighter than when they started work.

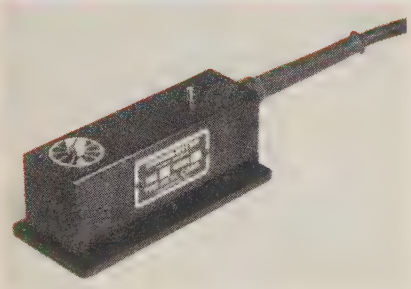
Those who drank water with the salt added lost, on an average, a little more than a pound. This proved that salt lost in sweating made it impossible for the body

(Continued on page 60)

KEEPING UP WITH...

Recent Developments in Noise Control

NOISE CONTROL SERIES
other articles in March and April



AUTOMATIC VIBRATION SWITCH

THE "MODEL 1 VIBRASWITCH" is used for vibration measurement or as a protective device permanently installed on any rotating or vibrating machine. Made by The Beta Corporation, it serves to prevent costly damage or material wastage from malfunctions either causing or resulting from excess vibration. An internal SPDT snap switch may be wired into control circuits carrying up to 5 amperes to actuate a warning or to shut down the machine the instant that the vibration exceeds normal by a pre selected amount.

The device is capable of actuation with vibratory displacement increases of less than 10 microinches at the most sensitive setting. Flat frequency response from 0 to 200 cps., (12,000 RPM,) provides reliable results on high speed equipment. The unit requires no power source or special auxiliary equipment.

For details, use Key # NC-1 on Inquiry Card on page 77.

ACOUSTICAL FORMBOARD FOR POURED ROOFS

A PERFORATED extra strong wood-fiber acoustical formboard for use in connection with poured-in-place gypsum roof decks is announced by Elof Hansson, Inc. The resulting ceiling surface combines sound absorption with thermal insulation and is a permanent, rigid and finished base of the gypsum concrete roof deck.

The formboard is treated against mildew and termites and is designed to permit proper curing of the monolithic roof structure. The standard size is 32 by 48 inches, with approximately 230 holes per square foot, and is painted white. It is designed for use with standard sub-purlins spaced at about 32⅝ inches on centers.

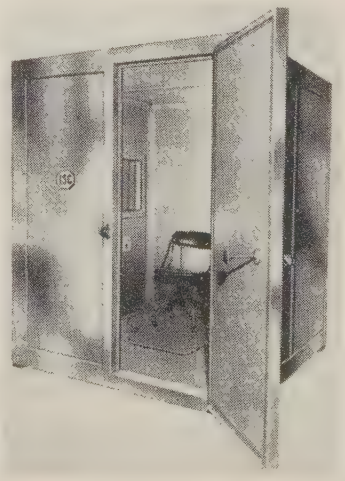
For details, use Key # NC-2 on Inquiry Card on page 77.

AUDIOMETRIC TEST ROOM

A PORTABLE AUDIOMETRIC testing room has been introduced by Industrial Sound Control, Inc., Hartford, Conn. Constructed of ISC "Soundmetal" Panels, it is designed to provide a zone of quiet for conducting audiometric and clinical hearing tests in noisy plant and factory areas as well as dispensaries.

The room, available in two models, is mounted on special vibration isolators and has walls, ceiling and floor of acoustically treated panels. Rooms are equipped with input jacks for instrument connection, 110 AC outlet plug and an external instrument shelf. Fluorescent lighting is utilized to maintain coolness. "Soundframe" window and ISC "Soundproof" door protect against noise leakage. A two-way intercom system is available at additional cost.

Each model room has outside



dimensions of 6'10" in height; 5'7" in width; and 5'7" in depth. Model 100 room has purged air ventilation during the time door is open; model 101 has continuous ventilation utilizing ISC Air-coustat sound trap.

For details, use Key # NC-3 on Inquiry Card on page 77.

EAR MUFFLERS

TWO NEW ANSWERS to high-level noise have been introduced by Mine Safety Appliances Co. The MSA Earsaver (shown at left) is designed for workers exposed continuously to high-intensity noise, and the MSA Noisefoe (shown at right) for men who must enter and leave noisy areas frequently.

Both devices utilize an over-the-ear cushion formed from a soft, spongy material to soak up large-amplitude noise waves and keep them from reaching the ear. The cushions were designed on the basis of extensive anthropological studies by the United States Air Force's Aero Medical Laboratory and attenuation studies by Mine Safety's own research staff. They are said to fit every ear comfortably and provide for an effective acoustic seal with the wearer's face.

The MSA Earsaver is a baseball-type, peaked cap which holds two ear cushions in position over the wearer's ears. Made of cotton gabardine, it has a wide cape of two-way stretch elastic material which extends around the back of the neck and over both ears. This presses the cushions against the face to assure a comfortable, effective seal. The cap is available in three sizes and each is equipped with an adjusting strap at the back of the cap to meet individual requirements.

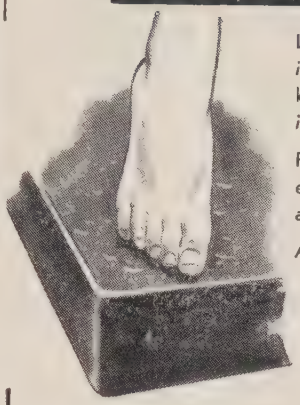
Supervisors, engineers, inspectors, and other workers who must move

ATHLETE'S FOOT?

Don't Take Chances!

ALTA-CO

KILLS FUNGI IN LESS THAN A MINUTE!



Low-Cost ALTA-CO POWDER *stops* Athlete's Foot *before it starts.* Independent laboratory tests prove ALTA-CO kills *all* forms of fungi commonly found in Athlete's Foot *in less than 60 seconds!* Harmless to skin, towels, clothing.

Foot baths in which ALTA-CO is dissolved can quickly, easily be tested for strength.* DOLGE rubber foot tubs available on special service offer with 5-year guarantee.

ALTA-CO FOOT POWDER in handy, sprinkler-top cans gives soothing, quick relief; guards against reinfection.

H.D. FUNGICIDE—Economical floor wash dilutes 1–300 parts of water to kill fungi on shower and locker room floors. Effective also in foot spray equipment.

Write for literature . . .
See your DOLGE Service Man.

*EXCLUSIVE ALTA-CO TESTER
Eliminates guesswork — helps keep your foot tubs at full strength always.

dependable DOLGE
WESTPORT, CONNECTICUT

(For details, use Key # E-28 on card on page 77)

ALL THE SAFETY OF A STAIR

CHOOSE FROM 115 MODELS TO MEET YOUR EXACT NEEDS!

Only Ballymore ROLL-OR-GRIP all-welded-steel ladders assure you of *just* the right portable safety stair for each need. A standard size range from one to twelve steps; a choice of three safety treads (expanded steel lath, steel grip-strut, or rubber-clad steel plate); optional hinged shelves or removable baskets; and a wide choice of widths within each size—these *extras* add convenience to the superior safety features built into every Ballymore — the original — safety-step ladder.

BALLYMORE Safety-Step LADDERS

Factory-trained representatives in principal cities

To: BALLYMORE COMPANY, WAYNE 18, PA.
( ) Forward free catalog of Safety-Step Ladders.
( ) Have representative call to survey my safety-ladder needs.

Name _____ Title _____
Company _____
Address _____

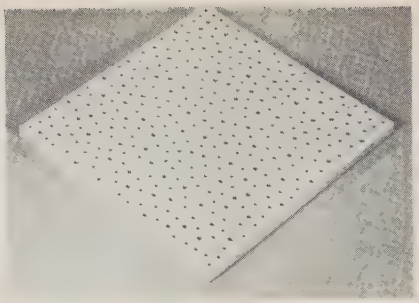
(For details, use Key # E-29 on card on page 77)

about from one section of a plant to another, often passing in and out of high-intensity noise areas, are offered the MSA Noisefoe. This device has the cushions described above attached to a spring-type head suspension for convenient donning and removal. It can be adjusted to fit any head size.

For details, use Key # NC-4 on Inquiry Card on page 77.

MINERAL FIBER ACOUSTICAL TILE

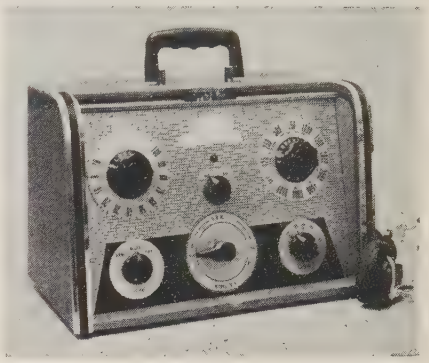
THE ADDITION OF new and improved characteristics in Minatone, mineral fiber acoustical tile, has been announced by Armstrong Cork Company's Acoustical Department. The new Minatone, made possible through recent research and manufacturing advances, has improved acoustical as well as decorative features, giving it increased value for both commercial and residential uses. Minatone combines excellent



sound absorption with complete incombustibility and has an added advantage in that it may be easily repainted without loss of acoustical efficiency. Fiberglas, blended with special agents, is used to produce the strong, rigid tile. The scattered perforations make for an almost unbroken ceiling effect.

Rated as incombustible under Federal Specifications SS-A-118a, Minatone is said to meet the most rigid fire safety codes and regulations. It can be used in any commercial, institutional, or industrial application where building codes require a completely fire-safe material. It is available in 12″ by 12″ and 12″ by 24″ tiles, finished on face and bevels with two coats of white paint. The new tile is easy to keep clean, adds insulation to the ceiling and is an excellent light reflector. It can be installed by cement, nail or screw application or by mechanical suspension methods.

For details, use Key # NC-5 on Inquiry Card on page 77.



PORTABLE AUDIOMETER

A NEW DESIGN in audiometers for accurately testing hearing loss has been announced by the Beltone Hearing Aid Co. for use in schools, industrial plants, clinics, medical offices, and other places where hearing tests are conducted.

Weighing less than 11 pounds, its circuit has been greatly simplified for better performance and easier maintenance. The unit has only one tube and one voltage regulator; and is carried in a self-enclosing case. A sliding panel protects the face of the instrument when not in use.

The new audiometer can be used for individual testing as well as for groups up to 40 persons. Other features noted by the manufacturer are: 1. For group testing the hearing loss can be read directly on the dial; 2. A new attenuator eliminates clicking sounds when the hearing loss dial is turned; 3. The masking tone is calibrated, for more accurate measurement in individual tests; 4. The instrument has one bone conduction and two air conduction receivers for individual testing; and 5. It is designed to meet the American Medical Association standards.

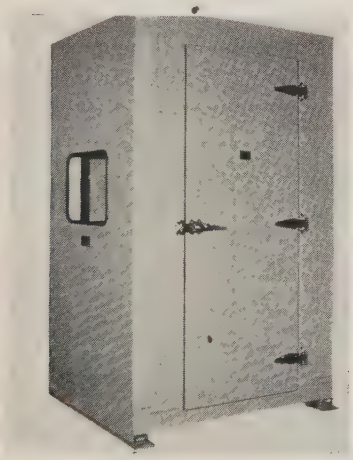
For details, use Key # NC-6 on Inquiry Card on page 77.

(For details, use Key # E-30 on card on page 77)

SOUNDPROOF WORK & TEST ROOMS

QUIET ROOMS for offices and recreation or relaxation areas in noisy factories, power plants, etc. are manufactured by Industrial Acoustics Co., Inc. of New York City. Use of these soundproof rooms permits supervisory and control personnel to carry on their functions unhampered by distracting factory noise. The Series 40A standard rooms are prefabricated of non-combustible materials.

For details, use Key # NC-7 on Inquiry Card on page 77.

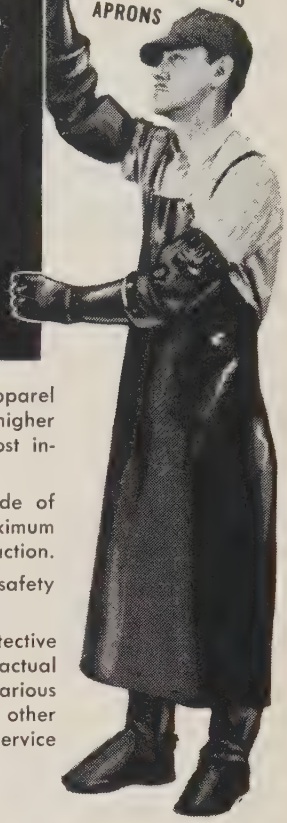


Industrial Acoustics Co., Inc., also is offering soundproofed rooms for giving audiometric tests to employees. The Series 400 standard audiometric testing rooms are prefabricated of non-combustible materials. The room is mounted on vibration isolators to prevent structural vibrations from entering the room. The units are shipped dismantled and can be easily reassembled after erection. Available in three sizes: 36, 48 and 72 inch widths; 28, 40 and 64 inch lengths; with 94½ inch height.

For details, use Key # NC-8 on Inquiry Card on page 77.

SURETY SURESEAL PROTECTIVE APPAREL PROTECTS PROFITS TOO!

GLOVES SLEEVES SPATS LEGGINGS APRONS



Sureseal, Surety's unique synthetic for protective apparel has 4 times higher snag resistance, 10 times higher abrasion resistance and highest resistance to most industrial chemicals.

Gloves, sleeves, aprons, leggings and spats made of Surety Sureseal are designed to combine maximum protection with worker comfort and freedom of action.

. . . which adds up to less drain on profits by high safety apparel costs, worker inefficiency and discomfort.

THE SURETY RUBBER CO. Carrollton, Ohio

Write for Surety Protective Apparel Bulletin with actual samples of Sureseal in various weights and swatches of other synthetics for special service requirements.

In Canada: Safety Supply Co., Toronto

(For details, use Key # E-31 on card on page 77)

NOW! AN IMMACULATE LOW PRICED STEEL FLOOR THAT IS SAFE!

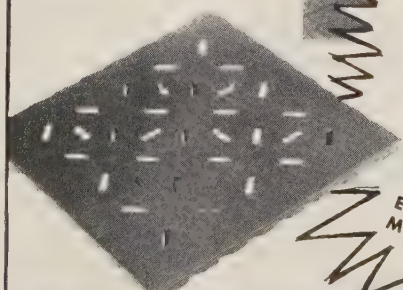
ANCORETTE STEEL FLOOR PLATES

WITH ITS (33) SAFETY ISLANDS THAT CHECK THE SLIGHTEST TENDENCY TO SLIP OR SKID

(33) TONGUES ANCHORED IN OPPOSING DIRECTIONS IN FRESH CONCRETE TO INSURE IMMOBILITY AND SECURITY OF THE PLATE

TOUGH, HOT ROLLED, DIE CUT STEEL NEVER WARPS, BREAKS OR SHOWS WEAR UNDER TRAFFIC OR PRODUCTION

EASILY INSTALLED BY YOUR OWN MAINTENANCE MEN



SEND FOR DESCRIPTIVE LITERATURE . . .

FLASH-STONE CO., Dept. A-1

121 N. BROAD ST., ROOM 806 · PHILADELPHIA 7, PENNA.

(For details, use Key # E-32 on card on page 77)

HEARING PROTECTORS

A NEW TYPE of device for preventing the harmful effects of loud noise encountered in many occupations is announced by the American Optical Co. Their "Straightaway Sound Protectors" screen out loud, high-frequency noises, but voices are audible to the wearer. The company points out that constant exposure to noise of over 90 decibels may cause deafness, which is often compensable. Loud noise causes irritation and a lowered standard of morale; it decreases plant efficiency by hindering communication; it causes accidents, since warnings cannot be heard when drowned out by louder noises.

AO Straightaway Sound Protectors muffle the ears and the adjacent bony structure which also transmits sound. Since nothing enters the ear, the company claims that the protectors are more effective, sanitary and comfortable. Soft vinyl foam pads are held on externally, fit snugly and conform to ear contours. There are both helmet and headband models. Some are equipped with earphones which connect to communications systems.

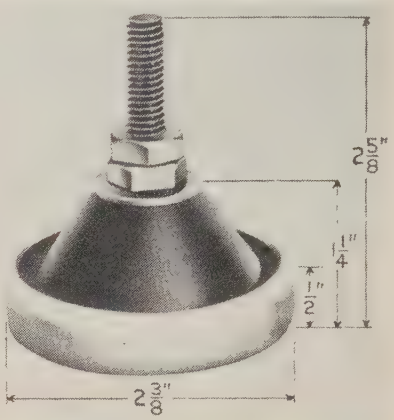
For details, use Key # NC-9 on Inquiry Card on page 77.

LIGHT DUTY MOUNTING

A NEW NEOPRENE insulated mounting for laboratory, scientific, and precision manufacturing equipment is announced by Bushings, Inc. Called "Instrumount" the new mounting is designed: to dampen vibration and insulate against shock, to serve as a means for leveling the equipment that it supports, to be impervious to the action of oils or greases, to provide a wide range of load capacity.

The conical shape of the neoprene element is said to be the reason that the mounting can be used at any load from 10 up to 50 pounds per mount and still maintain the necessary characteristics required for damping vibration and isolating shock.

The neoprene element has an enclosing base of stamped, plated steel



HOOD *Lightweight* Industrial Gloves — For Jobs

where "Touch" and "Feel" are important

No. 8009 gauntlet, for light industrial use. Working hands are protected but still sensitive to "touch" and "feel". It's coated with natural rubber; net-lined so that rubber doesn't touch the hand. A special rough surface assures firm grip. Small, medium, large sizes.

Write for free catalog — shows the RIGHT Hood neoprene, rubber or plastic coated glove for EACH job.

HOOD RUBBER CO., Watertown, Mass.

a division of the B. F. Goodrich Company

RUBBER - NEOPRENE - PLASTIC COATED INDUSTRIAL GLOVES

(For details, use Key # E-33 on card on page 77)

SAFETY
INDUSTRIAL FOOTWEAR
more comfort • less fatigue
fewer accidents
TOP NOTCH
Steel
SAFETY TOE CAP
WORKIN
Net lined all black 6" work shoe with non-skid DURATEST outsole. Steeltoe or plain.
INDUSTRIAL BOOT
With or without steeltoe, black ribbed leg boot with DURATEST non-skid design outsole.
BEACON FALLS RUBBER FOOTWEAR, BEACON FALLS, CONNECTICUT

(For details, use Key # E-34 on card on page 77)

and at the upper end has a threaded stud for securing and leveling the equipment as well as for adjustment for height. A hole at the base is for a hold-down bolt if required.

For details, use Key # NC-10 on Inquiry Card on page 77.

STEAM AND AIR EXHAUST SILENCERS

A NEW LINE OF high velocity steam and air exhaust silencers, designed to set new standards in noise control in critical and non-critical areas, has been developed, by the Burgess-Manning Co. manufacturers and inventors of industrial noise abating devices.

The new line is known as Series "ADS" Acoustic Discharge Silencers. They are designed to eliminate high and low frequency noises caused by high velocity discharge from steam and air devices. The new silencers operate on the patented Burgess-Manning snubbing principle and employ especially designed acoustic reactance chambers plus special sound absorbing material.

The new silencers are for use on steam vents, steam safety valves, hogging jets, gas turbines, air nozzles, evacuating ejectors and similar devices discharging high velocity steam and air into the atmosphere.

Series ADS will be available in three models: ADSO for optimum silencing in critical areas; ADSS for the type of silencing required in semi-residential and light industrial areas; and ADSC for commercial silencing in non-critical areas. All models will be available in standard 8 to 30 inch pipe size, but special sizes are available upon request.

For details, use Key # NC-11 on Inquiry Card on page 77.

METAL ACOUSTIC PANELS

THE NEW "GOLD BOND" acoustipanel system is designed to provide an efficient and easy-to-maintain metal acoustical unit that would still permit instant accessibility to utilities above the ceilings, according to the manufacturer, the National Gypsum Co.

Large 2 by 4 foot perforated metal panels rest on the edges of Tee Runners when the Acoustipanel is in place. Yet, when pipes, ducts, or wiring must be reached, any nearby unit can be easily pushed up and out of the way. Acoustical efficiency is assured from the mineral wool sound-absorbing pads behind each panel.

For details, use Key # NC-12 on Inquiry Card on page 77.

The Industrial Nurse

Sight Conservation

How can an industrial nurse, in a small plant having no safety engineer, participate in sight conservation? Answers are given in the following abstracts from "Field of Vision."

She can visit problem areas and point out the importance of proper lighting; explain the necessity for wearing nonshatterable goggles and the use of other protective equipment; discuss job placement according to visual skills; interpret need for eye care; and assist in the organization and development of a plant safety program.

Are disturbances in color vision related to pathological conditions?

True color blindness is not. But there are forms of inability to perceive color that do accompany disease.

How does one donate an eye to the Eye-Bank?

Sign a release, have your signature witnessed, and give this to your next of kin, or to whoever will have charge of burial arrangements. He in turn should notify your doctor or the hospital authorities, as eyes must be removed within two hours after death. Presently only hospitals have the necessary facilities for following required procedure.

How much does it cost to obtain a cornea from the Eye-Bank?

There are no fees for the removal of eyes; there are no fees for the eyes to be used for the cornea graft operation.

What eye conditions are suitable for corneal transplant?

Favorable results are usually obtained in such conditions as keratoconus, leucoma, keratitis, and some types of corneal dystrophy.

Trends

"In no other part of the body can changes in the arteries and veins, degenerations or inflammations, be so readily recognized as in the fundus of the eye," observes Dr. Arthur Bedell. In "New York State Medicine," December 1, 1954, he offers a stimulating presentation on the use of the ophthalmoscope as a diagnostic aid in physical examinations. Constitutional maladies as diabetes, hypertension, nephritis, tuberculosis and syphilis are described relative to their effects upon the interior of the eye. Dr. Bedell states that ophthalmic examinations reveal the progress of these diseases, assist in determining prognosis and general medical treatment. Photographs illustrate the changes in ocular fundus.

Health in Industry

An exhibit on "Health in Industry," displayed from March 8 last to May 31, is being shown in the Hall of Industry of the Detroit Historical Museum. Sponsors of the exhibition include the Detroit Board of Health, the United States Public Health Service, Wayne University College of Medicine and many Detroit firms.

The exhibit portrays the wide and complex field of industrial health and describes the efforts of the industrial physician, the industrial hygienist and the safety engineer to protect the health of the worker. The highlight of the exhibit is a completely equipped first aid room with an explanation of the equipment used and activities which take place in the room.

The first section of the exhibit relates the early history of industrial health. A major part is devoted to techniques of preventing industrial diseases. The exhibit also includes respirators, which were developed in the 19th century for the protection of workers, and a modern spray board, which demonstrates a method of plant ventilation. Protective equipment, such as gloves, aprons, goggles and protective cream, is also on display. Included in the exhibit is a portable resuscitator, used in the treatment of electric shock.

Motion pictures about the use of safety goggles, dust respirators and first aid are shown at 3 P.M., Tuesdays, Thursdays and Saturdays and a full length feature on industrial medicine is presented at 8 P.M. Fridays in the Detroit Historical Museum.

Part Time Industrial Nursing Service

I. Is Nursing Service Available for the Small Industry?

Yes, nursing service is now available on a part time as well as a full time basis. This service can be adapted for use in small as well as medium-sized or large industries. In some instances one nurse covers two or three plants in one day. Other existing plans call for as little as a few hours a week or even twice a month visits to the very small organization. Usually, the married nurse with home responsibilities, the nurse who is continuing her studies, or the nurse who simply wishes to work part time, are candidates for this phase of industrial nursing. Then too, some visiting nurse associations provide industrial nursing service on a part time basis.

II. What Kind of Nursing Service Does this Industry Need?

The nurse selected for industrial work has multiple responsibilities; chiefly they are—to the workers, to management, to the physician, and to the community. The industrial nurse must have a natural liking for people and a respect for their personalities in order to establish the rapport necessary to successful work. Her relationship to all personnel gives her a strategic value as interpreter of health practices and promoter of good will.

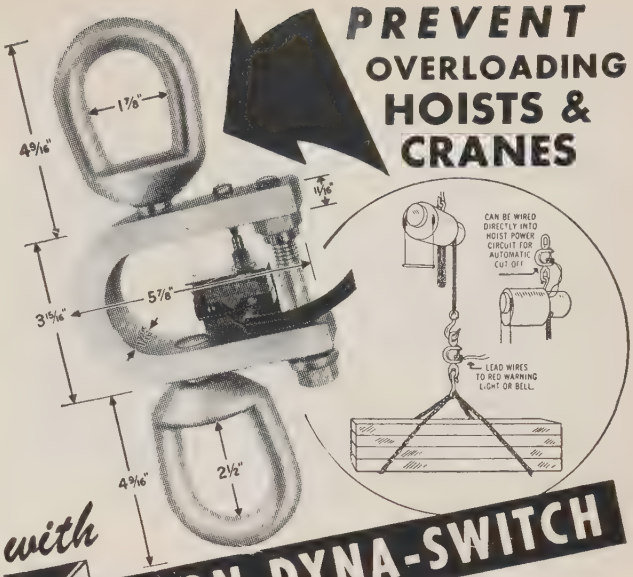
The industrial nurse's ability to evaluate the character and importance of symptoms and to record them properly makes her a valuable adjunct in the proper care and referral as well as the compensatory and legal aspects of industrial illness and injury.

III. What Would Be the Functions of the Part Time Nurse in Industry?

A part time industrial nurse would be expected to accomplish some or all of the functions listed depending on the amount of time her services had been contracted for:

1. Emergency care of the ill or injured employee.
2. Follow-up and proper referral of those cases needing the attention of a doctor.
3. Assistance in the rehabilitation of disabled persons.
4. Development and maintenance of records and reports.
5. Health counseling, individual or group.
6. Proper use of community resources.
7. Maintenance of the dispensary. Ordering of supplies. Supervision of cleanliness.
8. Assistance to management in: a. Developing and carrying out a suitable employee examination program; b. Integration of medical service with indoctrination of new employees; c. Participation in safety activities.
9. Cooperation with family physician in maintaining employee health.

(Continued next page)



PREVENT OVERLOADING HOISTS & CRANES

with DILLON DYNA-SWITCH

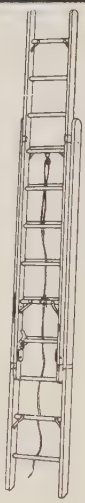
When load limit is exceeded, Dyna-Switch trips a sensitive micro-switch which may be connected to a warning bell or light. If Dyna-Switch is connected into the motor, the overload automatically cuts motor out, and load must be returned to floor and surplus weight removed before pickup can be completed.

Top working range is 20,000 lbs. Set at factory for any desired cutout point, but can also be re-set in the field if working conditions change. Low in cost—always on guard. Write or wire today for illustrated bulletin.

W. C. DILLON & CO., INC.
14628T KESWICK ST. • VAN NUYS, CALIF.
(Suburb of Los Angeles)

(For details, use Key # E-35 on card on page 77)

BABCOCK



Ladders

DESIGNED *for* SAFETY

Extensions
Singles
Stepladders

Built for safety and service. Industrial ladders of *Top-Quality* material and workmanship.

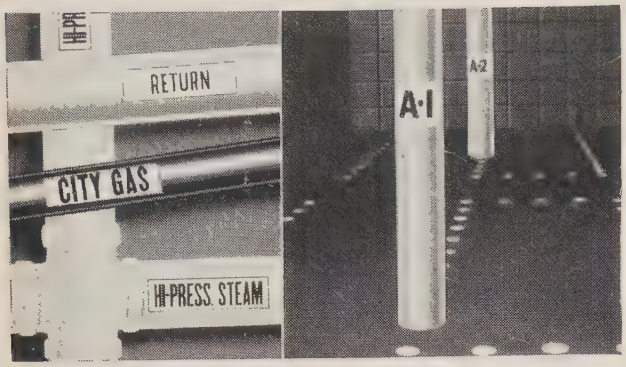
Underwriter's Approved

BE SURE BE SAFE BUY BABCOCK

The W. W. BABCOCK CO., Inc. • BATH, N. Y.

(For details, use Key # E-36 on card on page 77)

Self-Sticking Markers Cut Maintenance Time and Costs



Self-Sticking Markers which cut maintenance time and costs are available from the W. H. Brady Co., Milwaukee. One of their widely-used products, ALL-TEMPERATURE PIPE MARKERS, stick permanently to pipes as hot as 300°F. Millions of them in use in plants of all types today. They conform to ASA standards and give you a fool-proof, cost-cutting method of pipe identification. Write for Bulletin No. 135-B.

Brady Self-Sticking DOTTED LINE AISLE MARKERS offer a fast, low-cost way to mark aisles. They are so tough they outwear painted lines 5 to 1. Miles and miles of aisles are marked with these markers in plants everywhere. Write for Bulletin No. 141.

A quick, economical method for marking areas, bays, posts, bins, pallets, etc., is found in Brady Self-Sticking All-Purpose NUMBERS and LETTERS. These individual NUMBERS and LETTERS let you make up any combination of markings right on the spot. Stocked in six sizes, these handy Markers fit many plantwide Marking needs perfectly. Write for Bulletin No. 165.

Manufacturer: W. H. Brady Co., 741 W. Glendale, Milwaukee 12, Wis.
(For details, use Key # E-37 on card on page 77)

GETS-A-LITE GUARD and GUIDE Quickly and Easily Installed by Anyone — No Tools Needed!

- Simply slip GETS-A-LITE GUARD AND GUIDE over the fixture, as illustrated.
- Made of indestructible spring steel wire. Nothing to break, get out of order or replace. Will last indefinitely.
- Once installed, GETS-A-LITE GUARD AND GUIDE is NEVER removed.
- Nothing to unlock, fuss with or lock, when changing lamps.
- GETS-A-LITE GUARD AND GUIDE actually steers lamp into socket, enabling maintenance man to change lamp in 10 seconds!
- Available for 40 watt and 100 watt fluorescent lamps.

GETS-A-LITE Company—Dept. SM-55
3865 N. Milwaukee Ave., Chicago 41, Illinois

(For details, use Key # E-38 on card on page 77)

10. Special services such as inoculations, vaccinations, etc. (under the supervision of a physician): a. Catastrophic planning; b. Environmental health control; c. Welfare and benefit activities.
11. Training of auxiliary workers in first aid care.

IV. How Much Will Nursing Service Cost?

Standards for nurses' salaries are set up by the personnel practices of each state, on hourly, or part time, or consultant basis.

In many instances, a small part time medical service costs no more than one full-time clerk or secretary handling compensation and disability records and correspondence.

V. What Will Be the Return on this Investment?

Efficient nursing service frequently reduces losses due to:

1. Time taken up by employees traveling to and from doctor's offices.
2. Lowered efficiency of ailing employees.
3. Absenteeism from more serious illnesses which might be recognized in the early stages thus preventing disability.
4. Pilferage of first aid boxes.
5. Labor turnover for medical reasons.
6. Accidents caused by impaired health or poor mental attitude.
7. Late care of injuries, late detection of illnesses.
8. Lack of follow-up care.
9. Poor industrial relations.
10. Disease among older aged employees.

A Man's Worth His Salt Tablets

(From page 51)

to hold its normal amount of water.

The remaining problem that had to be faced in connection with the use of salt for heat relief was the fact that some individuals report nausea when they take salt tablets. An impregnated salt tablet, processed and patented by one of the country's largest salt companies, overcomes this problem. These impregnated salt tablets control the dissolving rate allowing the user to get immediate benefit without absorbing all the salt into his system at once.

Contrary to popular fallacy, the medical profession has found no evidence that salt intake causes hardening of the arteries since the salt is secreted through action of the kidneys.

Perhaps the clinching argument for the use of all salt tablets is their low cost. For less than a penny per person per week, many progressive industrial plants and offices provide salt tablets in handy dispensers near water coolers. In this very inexpensive way management has cut down the very costly toll of lost man-hours, reduced efficiency, and serious accidents which can result from heat fatigue.

Learning..... the hard way

A HAPPIER ENDING THAN MOST . . .

A LINEMAN'S HELPER had one leg almost completely severed and the other severely injured in what would be called a "freak" accident, if there were such a thing as a "freak" accident. Which there isn't.

While the line crew was stretching guy wire between poles, a passing bus became entangled in the wire which, in turn, looped around the legs of the helper. Immediate first aid treatment by trained members of the crew, and prompt dispatch to the hospital saved the man's life. Due to the severity of his injuries, one leg was amputated at the knee. Latest reports indicate good progress is being made by the lineman's helper; and, after being fitted with an artificial limb, he will be returned to work at another job with the same employer.

Great credit is due the first aid men in the crew for the efficient way they cared for their co-worker until he could be placed under medical treatment. Their action points up the need for first aid training for all personnel in industries where men work in small groups in the field. Of course, this accident should never have happened. Either the men should have been working far enough from the roadway so that the wire could not come in contact with passing vehicles, or one side of the road should have been closed to keep traffic away from the wire.

SQUARE PEG IN A ROUND HOLE

A WORKMAN WANTED to fire a heater, so he wrapped bunting around an end of a wire, saturated the bunting with kerosene and lit it. Then he tried to push his homemade torch through the small opening in front of the heater. However, the roll of bunting was too big and stuck in the opening. Thinking quickly, and wrongly, he turned on the gas hoping the burner would light. It didn't, so he turned the gas up higher and caught hold of the wire near the opening, and tried to force the lighted torch through. Just at this moment, the gas ignited and fire flashed back through the opening burning his hand.

This accident could have been prevented by the old Army "Dry-Run" method. Before he tried to push the torch into the heater the employee should have tested the fit without lighting the torch. Once having made that error, he could still have prevented the accident by turning the gas off immediately when it failed to light. Either he was improperly trained or he wanted to learn the hard way.

ANOTHER BARN DOOR CLOSED . . .

A MAN WAS CARRYING a large box up a ladder to the floor above. His foot slipped off the rung and he fell to the ground. It took him six days to get back on his feet.

It was discovered after the accident that the non-skid surface on the ladder steps had worn smooth. Now, new non-skid surfaces have been installed. The barn door is shut . . . but the employee had to teach management the hard way.

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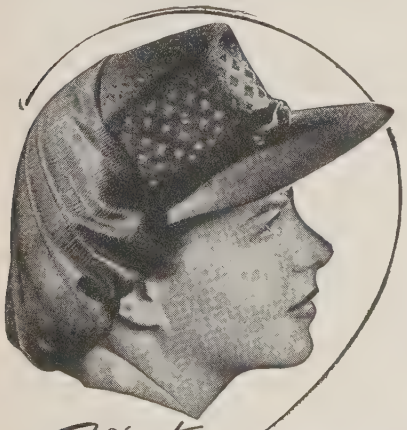
WILLIAMS JEWELRY & MFG. CO.
Dept. S5, 10 S. Wabash Ave.
CEntral 6-5018 Chicago 3, Ill.

(Use Key # E-39 on Inquiry Card on page 77)



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Combines utmost protection and style. Exclusive patented features found in no other hat.

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CHIC MAID HAT MFG. CO., Inc.
630 HIGH STREET
BUFFALO 11, N. Y.

(Use Key # E-40 on Inquiry Card on page 77)

inside the trade

James McMillan, prominent figure in Detroit banking and business circles, has been elected president of The Boyer-Campbell Company, Detroit distributor of mill supplies and industrial and safety equipment. Mr. McMillan, formerly Vice-President and Treasurer, succeeds William P. Goudie, who is entering semi-retirement after more than 40 years of service with the organization. Mr. Goudie will continue as a director.

Mr. McMillan will be associated in the management of the business with Robert G. Campbell, son of one of the company's founders who was re-elected Vice-President and Secretary and John F. Phillips, re-elected Vice-President in Charge of Sales. Mr. McMillan will continue as treasurer.

E. Weldon Schumacher has been elected president of American Optical Company, succeeding Walter A. Stewart who, at age 65, has retired in accordance with company policy. The new president has been affiliated with AO since 1938. For a three-year period he worked in all departments, and then directed the establishment of the new AO plant in Brattleboro, Vt. He returned to Southbridge in 1947 to become general manufacturing manager. In 1948 he was elected vice president for operations, and in 1953 a trustee of the company.

Edward J. Cross has been appointed Manager of the Glove Division at Hood Rubber Company, a Division of The B. F. Goodrich Company, Watertown, Mass. Cross first joined the Hood team at the Chicago Branch as Western Representative for the Glove Division.

A man who has labored more than 44 years to make mining a safer occupation was honored for his achievements by the American Institute of Mining & Metallurgical Engineers during the organization's annual meeting in Chicago. He is George H. Deike, Sr., board chairman of Mine Safety Appliances Company, Pittsburgh. Mr. Deike received the AIME's Erskine Ramsay Gold Medal Award "in recognition of his achievements in bituminous and anthracite coal mining."

Mr. Deike started his business career as a mining engineer after he was graduated from Pennsylvania State University in 1903. In 1911, he joined the newly formed United States Bureau of Mines and worked in the Mine Rescue Division. He and another engineer, John T. Ryan, decided, in 1914, to form their own company to provide miners with equipment that would eliminate many of the perils of mining. Thus, Mine Safety Appliances Company was founded.

Despite the daily pressure of his business, Mr. Deike has devoted much of his time to organizations dedicated to making mines safer places in which to work. He is one of seven coal industry men who founded in 1924 the National Mine Rescue Association, and has been active in many other safety groups.

The Fire Equipment Manufacturers' Association, Inc., representing the producers of all types of portable fire extinguishers and extinguishing agents, has elected H. Louis Stettler, Jr., Executive Vice President of Elkhart Brass Mfg. Co., Inc., as President. To assist him in carrying forward the Association's program of public service to prevent fire through the use of proper fire extinguishing agents and equipment, the following officers were elected: 1st Vice President, Paul R. Larimer, General Sales Manager, Ansul Chemical Co.; 2nd Vice President, R. L. Weir, General Sales Manager, The General Detroit Corp.; Treasurer, Paul Nurkiewicz, Vice President, Stop-Fire, Inc.; Commissioner, Offices of Hanson & Shea, Inc.

Mr. P. W. Eberhardt, Vice President of Walter Kidde & Company, Inc., has served the Association as its President for the past two years and now becomes a Director.

Speedi-Dri Corporation has announced that beginning July 22nd it will handle the marketing, on a nation-wide basis, of its floor absorbents. Up to now, the corporation has been selling only in New York, Pennsylvania and New England. Mr. R. A. Hogan will be sales manager and Larry Mank assistant sales manager.

The company is now a subsidiary of Minerals and Chemicals Corporation of America. There will be no change in the nature of the Speedi-Dri products and in the fall the subsidiary will move from Philadelphia to a new building now under construction at Menlo Park, N. J. Warehouse facilities will be maintained throughout the United States.

E. J. Girk, formerly vice president in charge of sales and advertising for the dental and industrial divisions of the Torit Manufacturing Company, has joined R. E. Dyment, Torit representative in Detroit. The Detroit firm will be known as Dyment

& Girk Associates. Girk, who spent 24 years in the home office of Torit, will continue as a director.

Frank R. Chase has been named as sales manager for the Torit industrial division. Chase was sales promotion manager for Multi-Clean Products Company of St. Paul for five years before joining Torit's staff. He will be in charge of sales and advertising for the Torit dust collector products.

Michael L. Duggan has been appointed General Manager of the Industrial and Prescription Division, Pennsylvania Optical Co. of Reading, Pa. Mr. Duggan was formerly associated with American Optical Co. in their safety and sun glass division, and also was safety director of the Army installation at Fort Monmouth, N. J. He brings to his new association at Pennsylvania Optical a wealth of experience in the field of eye protection and conservation of vision.

S. R. Baker, chairman of the board and president of the unified Pyrene Manufacturing Company and C-O-Two Fire Equipment Company, has announced the election of Maynard A. Laswell to executive vice president in full charge of over-all operations. Ralph F. Batch has also been elected to vice president in charge of industrial relations and allied activities.

The new titles and responsibilities were necessitated by the unification of the two fire protection equipment producers, which has been virtually completed. General offices and principal manufacturing operations are located in Newark, with branches in Atlanta, Chicago, Dallas and Los Angeles, and subsidiary operations in Pennsylvania and Canada.

Stanley J. Wilz has been appointed representative for Mine Safety Appliances Company in the territory of Mexico. Mr. Wilz, a graduate of the Illinois Institute of Technology and the American Institute of Foreign Trade in Phoenix, Arizona, has been with Mine Safety since September 1954. He will cover parts of Nicaragua and Guatamala in addition to Mexico.

Charles E. Meluney, Jr. has been appointed Houston District Sales Manager for the Electrical Wire and Cable Division of John A. Roebling's Sons Corporation. Mr. Meluney will have his headquarters at Houston and will be in charge of the division's sales activities covering most of Texas, as well as Oklahoma, Louisiana and Mississippi.

Cordley & Hayes, New York, N. Y., manufacturer of electric water coolers, announces the appointment of Lawrence D. Toolan as Sales Manager. Toolan, who

ORDER WALL DISPENSORS TODAY—refillable, self-dispensing cabinets for care of personnel eye gear. A time-saver in any department. Includes spray type plunger capped to bottle of Klear-Glass, feeding supply of lens tissues, receptacle for used tissues. AVAILABLE ALSO as non-drip pocket applicator and 1½ and 3½ oz. spray bottles for personal, car and home use.

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PREVENT FOG-OUT . .

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REALLY DOES THE JOB!

No glycerin, silicone or grease

Eliminates frequent time breaks required manual wiping of protective masks, goggles eyeglasses, immediately upon application. B efits of this superior double-duty DEFOGGI and CLEANING agent last for days. Du resistant too.

Klear-Glass insures greater accuracy and creased safety for worker and co-worker ali It avoids hazard of sudden steam or humid fog-outs. Vital applications include the found . . . at the lathe . . . on the assembly line . in the mine pit . . . in the refrigeration pl . . . with the truck fleet . . . in the business offi

Equally effective on glass or plastic surfac

ASK YOUR DEALER or write to Dep't P for literature and prices

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(For details, use Key # E-41 on card on page 77)

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Germ War!
Use PIONEER Stanzoils®
Only a liquid-tight glove gives positive physical protection from chemicals and germs that cause hand dermatitis. Also protects products from contamination by hands.
PIONEER *milled* neoprene stands extra hours of use in contact with oils, acids, caustics, detergents and solvents—has higher tensile, greater tear resistance than any other oil-resistant rubber.
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32 PIONEER styles, weights sizes and colors. Send for Stanzoil catalog—shows quickly how to select best, most economical glove for each job.
Stanzoil N-30 Whitecaps lightweight neoprene, sanitary white. Non-slip grip, curved fingers. Length 10½".
The PIONEER Rubber Company
244 TIFFIN ROAD • WILLARD, OHIO
Quality Gloves for 35-Years
STANZOIL
PIONEER

(For details, use Key # E-42 on card on page 77)

YOU CAN'T FALL
It's a Life Saver

IT LOCKS—IT HOLDS

SAFETY DEVICE FOR LADDERS

Prevents death and injuries from falling.

Inexpensive: Easy to install. Clamps on ladder rung or structures with peg steps or framework etc. No welding or cutting.

Automatic: Positive. Will catch workman if he starts to fall even if unconscious.

Simple to operate. No upkeep. Requires no attention from climber.

Notched rail **hot dipped galvanized.** Entire equipment rust and corrosion proof.

In use throughout country and abroad for approximately 6 years.

Patented. Manufactured only by

SAFETY TOWER LADDER CO.
1024 Burbank Blvd. P O Box 1052
BURBANK: CALIFORNIA
(Use Key # E-43 on Inquiry Card on page 77)

(Use Key # E-44 on Inquiry Card on page 77)

was formerly assistant sales manager, has had twelve years experience in product distribution and sales organization with Phoenix Mfg. Co., American District Steam Co., Sturtevant Division of Westinghouse, the American Radiator Co.

Excavation has started on a new $300,000 Engineering Building at The Cleveland Crane & Engineering Co., Wickliffe, Ohio. The building will accommodate 80 engineers and draftsmen engaged in designing overhead traveling cranes, conveyors, presses and shears.

William H. Loveman, President, American Industrial Safety Equipment Co. of Cleveland, Ohio announced the appointment of Donald T. O'Shea as Manager of the Industrial Sales Division. In his capacity, Mr. O'Shea will head a department which will be directly concerned with present day problems of eye protection in major industries, and the development of new devices to solve them.

Mr. O'Shea, who is a member of the American Society of Safety Engineers, has had a number of years of experience in the industrial safety field dealing with industrial concerns, utilities and railroads concentrating on head and eye protection devices.

The Chas. A. Strelinger Co., 149 E. Larned St., Detroit 26, Mich., has been appointed warehouse distributor for Berylco non-sparking safety tools produced by The Beryllium Corporation, Reading, Pa.

The Detroit firm will serve safety tool users throughout the state of Michigan from its own stock items and with its own sales force.

William L. Krapf, Manager of Bulkley, Dunton Processes Inc. of New York, N. Y., has announced the appointment of H. E. Danby Company, Inc. of Indianapolis, Ind., Nicholas A. D'Arcy, Jr., of Huntington Park, Calif., W. H. Davidson Company of Wayne, Pa., and John D. Homan of Tampa, Fla., as the sales agents and representatives of Bulkley, Dunton in their representative territories. The New York firm manufactures colloidair separators for the clarification of waste and process liquids for industry and commercial uses.

Mathematical Computing Service specializes in performing services for industries desiring engineering calculations, charts and monographs of a high degree of complexity and the treatment of related mathematical problems in the field of industrial engineering. An important function of the group is the mathematical formulation and complete solution of a problem from given physical data. The staff consists of consultants holding Doctorate Degrees who are qualified to treat problems in applied mathematics related to the physical sciences. The address of the organization is 67–24 211th St., Bayside 64, N. Y.

George C. Gregson, plant manager of the wire rope divisions of American Chain & Cable Company for the past 30 years, retired this spring. He has been succeeded by Ernest S. Wellhofer who will take over his duties at the company's Wilkes-Barre, Pa. and Houston, Texas plants. Charles H. Layton replaces Mr. Wellhofer as chief wire rope engineer.

Johnson and Johnson, manufacturer of first aid items, has appointed Larido Corp., 381 4th Ave., New York City, as exclusive distributors to the advertising specialty, premium, and gift trades. Eight types of first aid kits, with special space for advertising imprints, are now available for distribution.

Purchase of the assets of the Thermalectric Engineering Company (Van Nuys, Calif.) by Walter Kidde & Company, Inc., (Belleville, N. J.) was announced by John F. Kidde, company president. The new division manufactures bi-metallic and liquid expansion heat switches used for overheat or fire detection in aircraft engines and as controls for compartment heater units, a de-icer fluid heater, and other control devices.

The Kidde organization has also announced that William K. Winstead has been appointed southeastern District Manager for the fire extinguishing and detecting equipment of Walter Kidde & Company, Inc. His territory covers eleven states with headquarters at 101 Marietta Street, N. W., Atlanta, Georgia. Mr. Winstead has had wide sales experience in the south and is familiar with its industrial problems.

An expansion and modernization program now under way at the Fairmont, West Virginia, glass works of the lamp division of the Westinghouse Electric Corporation is expected to be completed in late July, according to F. M. Sloan, general manager of the lamp division. When complete, the new facilities will make it possible for Westinghouse to manufacture several new types of glass and to expand production of present types. A second expansion program is to be undertaken later in the year to extend manufacturing lines at Fairmont.

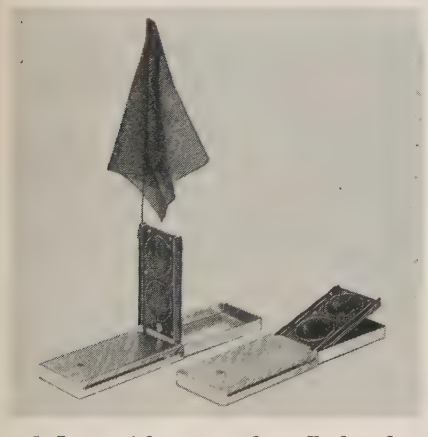
Appointment of Edward D. Flavin as Vice President of the Johns-Manville Sales Corporation and Manager of Special Industries, Industrial Products Division, has been announced by J. A. O'Brien, Vice President and General Manager of the Division.

transportation safety

SAFETY FLARE

A SIMPLE PULL on the cover of the Kilborn-Sauer flare sets it up for emergency use by operators of motor vehicles in the event of flat tires or breakdowns. When the cover is pulled, the flare automatically springs into an upright position, ready for use. For storage, the flare is just as easily closed by sliding the base together. Spring tension prevents rattling when closed.

Equipped with a 3-inch diameter red Stimson reflecting lenses, the flare meets all state requirements and all I.C.C. specifications. It is made of heavy gauge aluminum, and has a socket for a 12 by 12 inch



red flag, with a metal staff, for daylight warning. The flag is stored inside the flare. The hinge is riveted to prevent lost nuts.

A flare set consists of 3 flares in a bracket, which is easily fastened to the body of the vehicle. Closed, the flare is 5 by 10 inches by five-eighths of an inch overall. Opened, the base stands 20 inches long, and the flare stands 10 inches high. Available singly or in sets of 2 or 3.

For further details, use Key # TS-14 on Inquiry Card on page 77.

They're new . . . They're uniform . . . and they're called . . .

"DRIVER" STOPPING DISTANCES!

ACTION AIMED at ending years of indecision about just how long it takes to stop a moving car or truck on a highway has been taken at a conference of some of the nation's top traffic experts.

Original concepts for stopping distances involved only the distance traveled by a vehicle after application of the brakes. Later considerations included the distance traveled while the driver acted to bring a vehicle to a stop. Now we are aware that there is still another factor involved—the distance traveled while the driver recognizes the need for a stop and decides to do something about it. Consequently, the charts of the present day are, actually, a tabulation of ***driver stopping distances.***

The principal result of the conference is the development of a standard motor vehicle stopping distance chart. The chart is designed to show how far a given vehicle will travel at a given speed between the time the driver perceives danger and comes to a full stop. It will be used as a standard for all stopping distance charts issued by unofficial accident prevention agencies in the future.

As a basis of uniformity, the conference adhered to definitions, terminology and technical decisions already established by the National Committee on Uniform Traffic Laws and Ordinances and the Society of Automotive Engineers. Thus, these factors are involved in the uniform tables:

Perception-Reaction Distance—composed of two elements, ***reaction distance***, which is a known and measurable item and ***perception distance***, accepted as a separate factor and equal to reaction distance. Based on available data for "average drivers," .75 seconds was agreed upon for reaction time. Hence, perception time is also .75 seconds. Converted into the number of feet traveled at various speeds, the total of these two equal factors provides the Perception-Reaction Distance.

Vehicle Stopping Distances from speeds of 20 m.p.h. taken from the Uniform Vehicle Code. Converted

(Continued on page 68)

Single-unit Vehicles with more than 2 axles and Combinations of Vehicles (Truck-tractor, Semi trailer and Trailer) with a Manufacturer's Gross Vehicle Rating of 10,000 or More Pounds

M.P.H.	Perception-Reaction Distance: Perception Distance (Feet)	+ Perception-Reaction Distance: Reaction Distance (Feet)	+ Vehicle Stopping Distance (Feet)	= TOTAL Driver Stopping Distance
20	22	22	50	**94 feet**
25	28	28	80	**136 feet**
30	33	33	115	**181 feet**
35	39	39	157	**235 feet**
40	44	44	205	**293 feet**
45	50	50	260	**360 feet**
50	55	55	320	**430 feet**
55	61	61	388	**510 feet**
60	66	66	465	**597 feet**

Single-unit Vehicles with a Manufacturer's Gross Vehicle Weight Rating of Less than 10,000 Pounds

M.P.H.	Perception-Reaction Distance: Perception Distance (Feet)	+ Perception-Reaction Distance: Reaction Distance (Feet)	+ Vehicle Stopping Distance (Feet)	= TOTAL Driver Stopping Distance
20	22	22	30	**74 feet**
25	28	28	42	**98 feet**

30	33	+	33	+	58	= **124 feet**
35	39	+	39	+	80	= **158 feet**
40	44	+	44	+	106	= **194 feet**
45	50	+	50	+	138	= **238 feet**
50	55	+	55	+	177	= **287 feet**
55	61	+	61	+	222	= **344 feet**
60	66	+	66	+	273	= **405 feet**

Single-unit, 2-axle Vehicles with a Manufacturer's Gross Vehicle Weight Rating of 10,000 or More Pounds

M.P.H.	Perception Distance (Feet)	+	Reaction Distance (Feet)	+	Vehicle Stopping Distance (Feet)	=	**TOTAL Driver Stopping Distance**
	Perception-Reaction Distance						
20	22	+	22	+	40	=	**84 feet**
25	28	+	28	+	64	=	**120 feet**
30	33	+	33	+	92	=	**158 feet**
35	39	+	39	+	126	=	**204 feet**
40	44	+	44	+	165	=	**253 feet**
45	50	+	50	+	208	=	**308 feet**
50	55	+	55	+	256	=	**366 feet**
55	61	+	61	+	310	=	**432 feet**
60	66	+	66	+	372	=	**504 feet**

Passenger Vehicles, Not Including Buses

M.P.H.	Perception-Reaction Distance: Perception Distance (Feet)	+	Perception-Reaction Distance: Reaction Distance (Feet)	+	Vehicle Stopping Distance (Feet)	=	TOTAL Driver Stopping Distance
20	22	+	22	+	25	=	**69 feet**
25	28	+	28	+	35	=	**91 feet**
30	33	+	33	+	48	=	**114 feet**
35	39	+	39	+	67	=	**145 feet**
40	44	+	44	+	90	=	**178 feet**
45	50	+	50	+	117	=	**217 feet**
50	55	+	55	+	148	=	**258 feet**
55	61	+	61	+	185	=	**307 feet**
60	66	+	66	+	228	=	**360 feet**
65	72	+	72	+	275	=	**419 feet**
70	77	+	77	+	332	=	**486 feet**

"Driver" Stopping Distances

(From page 65)

to higher speeds by factors derived from results of Bureau of Public Roads tests.

It must be pointed out that laboratory tests of Driver Stopping Distances will frequently show results far below the number of feet indicated by the charts. Under such controlled test conditions, drivers *know* that an emergency situation is to be encountered, so perception time and reaction time are considerably shortened.

The new chart, while not intended to have any "legal" standing, will wipe out major differences among the dozens of such charts currently being distributed to the driving public by insurance companies, safety councils, transportation and transit organizations, motor vehicle bureaus, driver education authorities and others.

Most important decision at the meeting, attended by representatives of the Association of Casualty and Surety Companies, the United States Bureau of Public Roads, the American Automobile Association, the American Association of Motor Vehicle Administrators, the American Trucking Associations, the American Transit Association, the Center for Safety Education at New York University and the National Association of Independent Insurors, was unanimous acceptance of a standard "perception-reaction" time for drivers. Previously, there had been no general agreement among designers of the charts on the perception-reaction time.

With acceptance of a standard perception-reaction interval, defined as 1.5 seconds, it is now possible to chart exactly how far a vehicle will travel, both before and after the brake is applied.

Chart data by courtesy of National Conference on Uniform Stopping Distance Charts.

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TO EVERY ONE OF YOUR EMPLOYEES!

Safety is made attractive... vivid... colorful...

each worker clearly sees how safety benefits him.

You get enthusiastic safety cooperation instead of

tolerance... from every employee... every month.

YOUR
Safety News
PUBLISHED IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
PROTECT YOURSELF
3
WAYS
There are three safe practice ways that do the most good in keeping free of accidents, all based on your personal desire to know safety and keep yourself safety-minded by studying the hazards of your work They are
1 Make sure all guards are in place and working and wear the personal protective equipment your job requires
2 Learn the safe way to do a job and do it just that way.
3 Report, avoid or eliminate all unsafe conditions.
As we see it: Safety is part of every job and like any craft it requires skill.
John Doe

Size 5½" wide x 8½" deep

...talks the worker's language

Full of color, pictures, humor and snap, it makes safety interesting and down-to-earth. 12 times a year it covers every accident hazard. Nationwide, leading industrial firms state it's the *only safety paper their employees will read* . . . and take home to their families.

It gives you the advantages of personal contact, saving time and money. When it prevents one Lost Time accident, it has more than paid its cost for the year. Try it . . . it works!

Your Imprint Here!

makes YOUR SAFETY NEWS your own publication . . . a good-will ambassador . . . another force for better industrial relations.

Every employee feels bucked-u by a note from the boss. If you d sire, your facsimile signature cc be printed here.

Your Signature Here

NOTE:
Your Safety News is designed to promote better employer-employee relations. Every item is carefully weighed from this viewpoint.

INSIDE PAGES

(pages 2 and 3)

Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
From the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES
WORK OVERTIME
Dress for Safety
SAFETY SHOES
FALLS
FALLS KILL 80 EVERY DAY

IN YOUR EMPLOYEE'S INTEREST

Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

CHOCK-FULL OF ILLUSTRATIONS

Artwork is carefully chosen to lodge home each point. The cartoon style makes YOUR SAFETY NEWS as familiar and as welcome as the Sunday supplement.

THE "FOLKSY" APPROACH

Keeping the contents folksy, adding the grace note of humor, delivers your safety message with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of tolerance.

VIVID COLOR

Generous use of color gives sparkle, adds to the attention-riveting qualities of YOUR SAFETY NEWS. Each issue is as lively as any news-stand favorite.

HOW TO ORDER

YOUR SAFETY NEWS may be ordered with either the Standard imprint or with your Own Special Imprint. The Standard Imprint reads PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER.

You can personalize YOUR SAFETY NEWS with the name of your firm and the name or facsimile signature of a company representative as illustrated. Give full instructions for your Special Imprint on the order blank below.

Item (1) FIRM NAME. Please show the name of your firm exactly as it is to appear.

Item (2) INDIVIDUAL NAME OR SIGNATURE, if desired. On a sheet of white paper, please show, in black ink, the individual name or signature, if desired, which is to appear each month on the first page of YOUR SAFETY NEWS.

NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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3,001 to 6,000 copies	3¢ each	2½¢ each
1,001 to 3,000 copies	3½¢ each	3¢ each
501 to 1,000 copies	4½¢ each	4¢ each
200 to 500 copies	5½¢ each	4½¢ each
100 to 199 copies	6½¢ each	5¢ each
25 to 99 copies	*	5½¢ each

*** 5½¢ each plus $3.00 per month for Special Imprint F.O.B. New York, N. Y.**

Material appearing in this section is published as information for our readers and is not intended to imply endorsement or guarantee by SAFETY MAINTENANCE.

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE & PRODUCTION

AIR LINE HAND VACUUM

(Use Key # 884 on Inquiry Card on page 77)

IT'S NOW POSSIBLE to convert any air line into a powerful vacuum cleaner for either wet or dry pick-up with the Bennett Industrial Air-Operated Cleaner, available from M-M-A, Inc. Completely redesigned, this new cleaner now meets the needs of hundreds of industries where good plant housekeeping and safety factors are of concern.

The unit picks up the particles of lint, waste, hair, filings, lathe cuttings, etc. and deposits them into an easily emptied container. Or, it can easily be connected to larger waste collecting installations, drums, etc. It can also be used for wet pick-up and will empty a 50-gallon drum of water in about 60 seconds.

The absence of electrical parts and its non-ferrous construction eliminate the chance of sparks and the danger of fire in operations where combustibles are handled. A convenient standard valve arrangement with trigger can be used as wanted, or the unit can be set to produce a steady vacuum for installations on grinders, belt sanders, etc. Weighing less than 1½ pounds, it is easy to handle and has no moving parts.

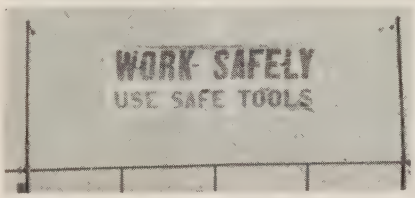
TEXTILE FLAME RETARDANT

(Use Key # 885 on Inquiry Card on page 77)

A NEW, RENEWABLE type flame retardant, "X-12," designed to give improved temperature and aging stability in flame retarded materials has been developed by the Grasseli Chemicals Division, E. I. du-Pont de Nemours & Co., Inc. It is easy to apply in water solution, followed by drying, and may be used on paper, cotton, linen, viscose rayon and other cellulosic materials, but not on acetate rayon or synthetic fibers

The temperature stability of X-12 is an important advantage. It means longer service life for the treated material and shorter processing time because fabrics can be dried and ironed at higher temperatures. Special agents in the compound insure penetration, retention of original fabric or paper properties, and the prevention of flame after-glow. It has little or no effect on the color or light-fastness of a wide range of dyes. The compound is a crystalline powder which is dissolved in hot water. It resists dry cleaning solvents, but must be reapplied after laundering.

In the textile field, X-12 is suitable for treating workmen's clothes, curtains, bed spreads, felts, rugs, upholstery, etc. In the paper industry it can be used on cardboard, insulating papers, matchboard, crepe, tissue, molded paper products, etc.



SAFETY BANNER-OF-THE-MONTH

(Use Key # 886 on Inquiry Card on page 77)

TO HELP KEEP employee interest in safety alive and to provide a variety of safety reminders, L. G. Harkins & Co. is offering a unique "Banner of the Month" plan. Two types of banner programs are provided: 1. the subscriber receives a new general safety awareness banner each month for a year; 2. the 12-month subscriber can select specific banners from a collection of over 400 different slogans. Among the many subjects covered are wearing goggles or other eye protection, good housekeeping, hand safety, foot safety, tool safety, following safety rules, etc. A catalog of the slogans is available.

The banners are 10 feet long and 42 inches high, in two and three colors on special heavy banner cloth. Those for outside display have hemmed edges and have 20 feet of rope double-stitched along the top and bottom for display at plant gates or other strategic outdoor locations. Banners for inside hanging have four eyelets evenly spaced along the top and bottom.

AIR BLOWER RESUSCITATOR

(Use Key # 887 on Inquiry Card on page 77)

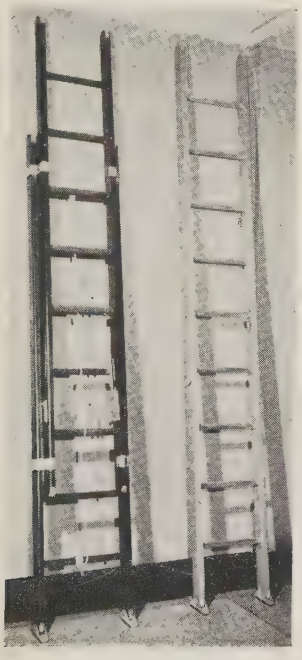
A NEW CONCEPT of automatic artificial respiration is embodied in the Seeler Universal Resuscitator, announced by Globe Industries, Inc. The unit is designed to operate from a fresh air blower and thus can be run off an electric current of 110; 28, or 8 volts. Because the resuscitator can be so operated, its weight is less than ten pounds.

Originally developed at the Aero Medical Laboratory, Wright-Patterson Air Force Base, Dayton, Ohio, the resuscitator is well suited for the police, fire, rescue squad, ambulance and other emergency services because it can be operated on the current from a car or truck battery. For Civil Defense and military use the resuscitator could be pressed into service where oxygen supplies were limited or unavailable. The unique resuscitator valve is designed to operate on positive and negative pressure or on positive pressure alone. It is also available with an oxygen cylinder. This unit weighs twenty-nine pounds and can be used with an air blower unit by using a simple connection.

SILICONE TANNED SHOES

(Use Key # 888 on Inquiry Card on page 77)

LEATHER SAFETY shoes which are treated in the tanning stage with Dow Corning "Sylflex" are now available from Record Industrial Co. This treatment renders the shoes waterproof, yet allows the leather to "breathe." In addition to water, the silicone product also stops chemicals, oil, bleach and caustic absorption. These liquid-proof shoes are suitable for wet conditions, as found in chemical plants, oil refineries, pulp mills, construction work, etc. They have neoprene soles and dacron stitching for longer wear under the most severe conditions. The silicone treated safety shoes are available in both oxford and high styles.

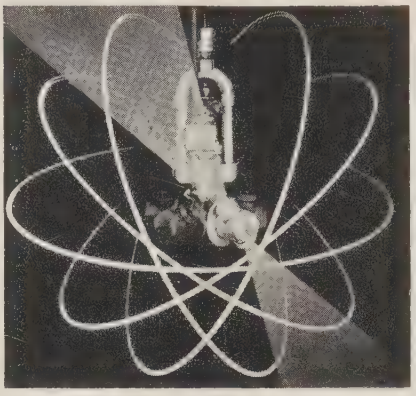


FIBER GLASS LADDERS

(Use Key # 889 on Inquiry Card on page 77)

A NEW TYPE of fiber glass ladder combines the light-weight qualities of light-metal ladders with the non-conducting qualities of wood ladders. Developed by the Putnam Rolling Ladder Co., the new ladder utilizes the tough fiber-glass sandwich construction used in the fabrication of boats, airplanes and auto bodies. The rails have cores of balsa wood laminated and coated with fiber glass re-enforced plastic. The aluminum or magnesium non-twisting rungs are plastic-welded to the rails to become an integral part of the ladder. The result is a smooth, splinter-free ladder of light weight for ease of handling.

The manufacturer claims that the ladder's strength-to-weight ratio exceeds those of most metals and because of its resistance to chemicals, heat and water absorption, it is more durable than wood. Standard-duty and heavy-duty types are available in both single and extension models of various lengths.



THREE-DIRECTION TANK CLEANER

(Use Key # 890 on Inquiry Card on page 77)

A NEW TANK CLEANER providing three-dimensional rotation of a high pressure hydraulic jet has been announced by the Sellers Injector Corporation. Designated as the "Rotor Jet," this compact, lightweight device delivers two powerful streams of hot or cold water, with or without detergents, over the entire inside surface of any shaped tank.

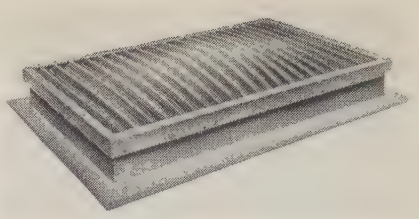
Portability of the Rotor Jet enables one man to handle the entire tank cleaning operation without assistance. The unit is simply lowered through the tank access by means of its supply hose. Since it is completely controlled from outside, workmen need not enter the tank.

The mechanical movement of the Rotor Jet assures complete coverage. Cleaning speeds are fully adjustable—high speeds for light cleaning or rinse; slow speeds for heavy cleaning give longer hydraulic scrubbing and greater heat transfer to the tank surface. The two jets, powered by a venturi-injector, provide high velocity streams so that a scrubbing rather than cascading action results. The jet head is rotated pneumatically, so that all hydraulic power is utilized for cleaning. It is available in three models for discharge capacities from 600 to 6000 gph.

FIBER GLASS SKYLIGHTS

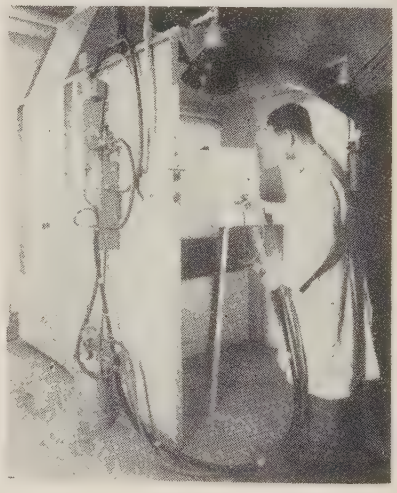
(Use Key # 891 on Inquiry Card on page 77)

THE CONSTRUCTION advantages of translucent fiberglas panels, such as excellent light diffusion, virtual indestructibility, and exceptional insulating qualities,



have been incorporated into a new line of packaged skylights and ventilators, now being fabricated and marketed by the Marco Co. The featherweight skylights and ventilators consist of a corrugated translucent structural panel made by the Alsynite Company of America, permanently set in an extruded aluminum frame. The complete unit is factory engineered for permanent, maintenance-free service, and it can be attached to the curb member in minutes with only a screwdriver.

The fiberglas panel is slightly domed in the middle to permit inside condensation to flow to the frame's built-in gutter, where it is channeled to the outside via weep holes spaced at 4 in. intervals. The extruded frame is a rugged, one-piece unit that is mitered and welded at corners for maximum strength, ease of handling and clean appearance.



PAINT HEATER

(Use Key # 892 on Inquiry Card on page 77)

THE CONTROL OF organic material temperatures for the hot spray process is achieved in a new line of paint heaters developed and manufactured by the DeVilbiss Company. This paint heating system, which utilizes hot water, is designed for maximum efficiency in either large or small painting operations. The only moving part is a pump for circulating hot water.

Material to be sprayed is heated in a heat transfer unit located near the spray station. Exchange of heat from the hot water to the material is positive and speedy. Paint cannot become overheated. To assure heated material at the point of usage, a jacketed hose runs from the heat exchanger to within a few inches of the conventional spray gun. The water is heated in a separate unit which can be located wherever most convenient.

WATER COOLER FOR HAZARDOUS AREAS

(Use Key # 893 on Inquiry Card on page 77)

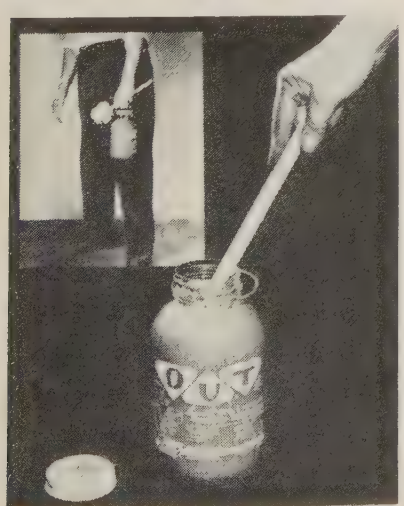
PURO FILTER Corporation of America has announced that its compartment-type water cooler, Model TC-8X, has been the first of its kind to receive Underwriters' Laboratories approval for use in hazardous locations. These Puro coolers have been made explosion-proof by enclosing all electrical components, which, however, are still completely accessible for servicing.

The unit combines the bubbler-top (with patented non-clogging pre-cooler) and refrigerated cold storage compartment for beverages and food. It also contains two ice cube trays. The stainless steel compartment has approximately two cubic feet of space and also has a drain for condensation. It is equipped with cabinet-type lock and two keys and operates on either AC or DC current.

NEW WASHROOM CLEANER

(Use Key # 894 on Inquiry Card on page 77)

FULD BROTHERS, Inc. have introduced a new product, "OUT," a washroom fixture cleaner and disinfectant which, they claim, has important advantages over conventional cleaners ordinarily used in washroom maintenance. The product performs four jobs in one—cleaning, disinfecting, sanitizing and deodorizing. Rigorous tests have shown it to be safe for use in toilet bowls, urinals, sinks, tubs, showers, etc. It can be used on ceramic, porcelain and porcelain enamel surfaces, vitreous and non-vitreous, without injury to the finish. While it works fast and thoroughly, no gloves or special handling are required.



The product is a blue liquid cleaner, packed in half-gallon and gallon jugs. The jug has a wide mouth, permitting the mop to be dipped directly into the cleaner. The disinfectant qualities keep the mop sanitary. The jug has a convenient carrying handle, and is packed in regular cardboard cartons. Mops and check-mirrors are included in each carton.

PRESSURIZED WATER EXTINGUISHER

(Use Key # 895 on Inquiry Card on page 77)

A NEW PRESSURIZED water type fire extinguisher, "Elk-Air," has just been announced by Elkhart Brass Mfg. Co., Inc. This is the first extinguisher of its type using only Air-Pressure rather than a cartridge charge to be listed by U. L., according to the manufacturer. An outstanding feature is the minimum cost of maintenance. It can be recharged simply by replacing the water and pressurizing by air the same as an automobile tire.

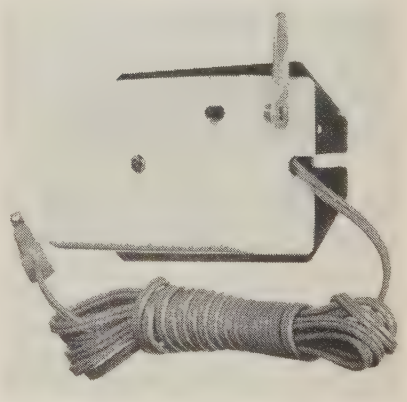
Valve controlled, Elk-Air is easy to operate. Merely pull the pin, direct hose nozzle and squeeze handle to release stream. The valve control permits stream to be turned on or off, conserving water and eliminating excess water damage. An easy-to-read pressure gauge indicates if extinguisher is ready for action. Tests show that the unit gives full capacity use of the 2½ gallons of water and will maintain a steady stream length of from 35 to 40 feet, until water supply is exhausted with no dribbling or drop-off of stream. The extinguisher has a removable fill tube with anti-overfill feature, and carries the Underwriters' Laboratories Inc. Approval for Class A-1 incipient fires, which covers such items as wood, cloth, paper and rubbish. It has a seamless brass drawn shell with all brass forged parts, and can also be supplied with an anti-freeze charge.

NEW LINE MARKING PAINT

(Use Key # 896 on Inquiry Card on page 77)

A NEW PAINT suitable for municipal, airport, highway and industrial line-marking, factory and home interiors and building exteriors has now been developed and tested by the research laboratories of the Rock Paint and Chemical Co. The new paint, called "Glazroc," is completely odorless, fire resistant, fast drying and may be thinned with water. It will adhere to concrete, metal, wood, plastic, plaster, asphalt, asbestos, concrete block and stucco. It will cover dirt and grease and when used as a line or sign marking paint, will not react chemically on tar or asphalt, and is non-tracking after 30 minutes. Second coat, when needed, may be applied after 60 minutes and it can be beaded where necessary. Glazroc will withstand temperatures up to 500° Fahrenheit and its scrubbability is excellent.

Because Glazroc does not contain or require flammable thinners there are no harmful, explosive fumes; it is non-irritating to those allergic to paint or paint fumes and may be applied indoors without extra ventilating precautions. May be removed from brushes, machines, skin, clothing with soapy water. It is not discolored by industrial fumes and will not change color from vehicle. It can be applied thin or heavy with either brush or spray machine and may be repainted with any paint without difficulty. Available in almost any color in quantities from quarts to tank cars.



DOOR ALARM

(Use Key # 897 on Inquiry Card on page 77)

MANY SAFETY applications can be found for "Dor-A-Larm" a newly developed warning device which was originally designed as protection against illegal entry. Operating on standard 110 volt, 60 cycle electric current, the unit is easily attached to any window sill or door jamb by two mounting screws. If the protected window or door is opened as little as one inch, a powerful bell-alarm is set off.

All parts of the unit which comes with an 11-foot electric cord are UL approved and the device is fully guaranteed by its manufacturer. For safety purposes, it could be used as an alarm to prevent entry by unauthorized personnel into particularly hazardous areas.

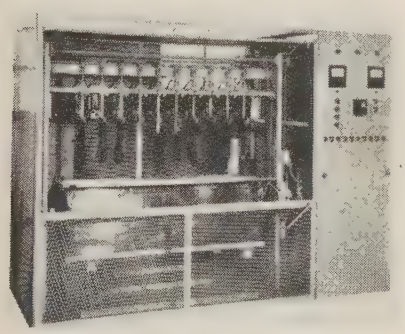
PORTABLE VENTILATOR

(Use Key # 898 on Inquiry Card on page 77)

A PORTABLE ventilator has been announced by the manufacturer, Mine Safety Appliances Co. Used as a blower or as an exhauster, the two-way ventilating system is a compact, easily portable unit with many applications in a variety of industries. Suggested applications include removing toxic or fume-laden air from tunnels, manholes, shipholds, and other confined areas; removing smoke from factory or foundry operations; dust removal in operations such as sandblasting, cement unloading, plaster chipping, or dry chemicals handling; or to remove fumes resulting from welding or paint spraying. It may be used either with or without the accompanying collapsible air duct.

With its duct, the MSA Portable Ventilator is suitable for ventilating confined areas which cannot be reached by conventional types of stationary ventilating equipment.

The ventilator is driven by a powerful 3450 rpm, explosion-proof electric motor, capable of moving approximately 3000 cubic feet of air per minute. It is supplied complete with 15 feet of three-wire electrical cable, and a 15-foot length of 14-inch diameter duct, and two carrying belts.

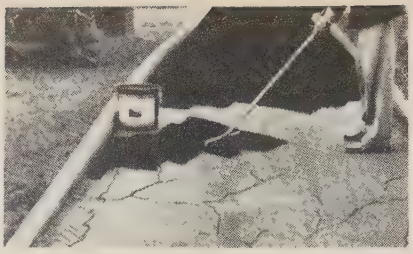


ELECTRICAL GLOVE TESTER

(Use Key # 899 on Inquiry Card on page 77)

THE DEVELOPMENT of a complete line of glove testers is announced by F. R. Hannon & Sons. The new Hanco Glove Tester measures the dielectric strength of rubber and synthetic gloves normally found in the electrical field. Available in 4, 6, 8, and 10 glove models, it is said to meet all specifications of the American Society for Testing Materials. Having a capacity of 50,000 volts, it can be manually or automatically controlled. During the 4-minute test cycle, the leakage on any glove can be read on the milliammeter within 1% accuracy. Tester operation is said to be simple and safe.

The tank compartment gate is electrically interlocked with the power panel and remains locked during complete test cycle. The enclosed test tank is mounted on insulators and grounded through a special grounding device when removing or placing gloves in the tank. Insulated glove holders are mounted on a counterbalanced ball bearing carrier which can be latched in either the filling or testing position. The glove electrodes are adjustable to length of glove being tested.



DRIVEWAY SEALER

(Use Key # 900 on Inquiry Card on page 77)

A DRIVEWAY topping and sealer containing no water to permit application under any weather condition has been introduced by the Sylvania Chemical Co. The "Sylvus Driveway Topping and Sealer" will fill all cracks and voids and is suitable for any hard top surface whether black top or cement. This heavy body paint chemically combines the softness of asphalt and hardness of tar so that it will not soften under hot weather conditions nor crack during winter weather.

The material is used as it comes from the container, requiring no special tools or equipment. One application with a three-knot brush, barn broom or squeegie will last for a minimum of three years. It dries to a hard black finish in two to three hours, resists gasoline and grease, and waterproofs and seals the driveway. One gallon covers 50 to 60 square feet, and is marketed in five gallon containers and 55 gallon drums.

FIRE RESISTANT CURTAINS

(Use Key # 901 on Inquiry Card on page 77)

THE DANGERS of fire destroying industrial curtains and partitions and possibly spreading to other parts of a building are eliminated by the use of Duratex Utility Curtains. Duratex, manufactured by Duracote Corp., consists of a fabric base woven of Fiberglas or Nylon yarn coated with synthetic plastic resins—that will not harden, crack or peel—for complete and permanent fire resistance.

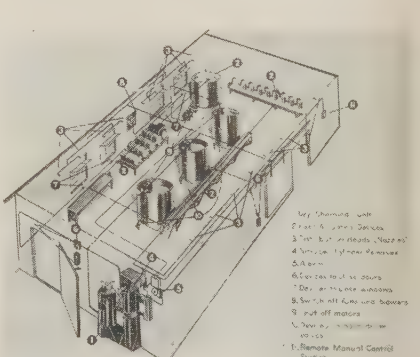
These utility fabrics are widely used for welding curtains and as electrical insulating blankets for the protection of personnel and equipment during maintenance and repairs. The material is also light weight, has high breaking and tearing strength, smooth surfaces which make it snag and dirt resistant, withstands water, oil, grease, alkalis and most acids and is not affected by temperature extremes. These qualities make the fabrics suitable for such uses as paint department curtains, heat barriers, pickling operations and for temporary and permanent room-dividing partitions. Light dusting will keep the smooth surface clean and, in the event of extreme soiling, soap and water will remove any spots. Duratex standard fabrics include three weights each in Fiberglas and Nylon. The standard color is rich Forest Green. Other colors are available in minimum order quantities.

PLASTIC ROPE

(Use Key # 902 on Inquiry Card on page 77)

A NEW PLASTIC cable with innumerable industrial applications is now being marketed by Reynolds Industries. Made of du Pont's "Mylar," the cable offers a unique combination of advantages to industrial users. It has high mechanical strength, high impact strength, excellent flex life, is completely impervious to water, highly resistant to solvents and chemicals, and has thermal stability over a temperature range from minus 70° F. to plus 300° F.

Development of special machinery for twisting "Mylar" film into strands and laying the strands into cable has made this new rope possible. The cable may be spliced the same as regular fibre rope and may be cut with the "hot knife" method. The cut ends will heat seal to prevent unraveling. It shows remarkable resistance to abrasion and will safely handle large work loads. Applications have already been made in the marine, construction, petroleum and chemical industries. Safety engineers in many other industries have expressed interest, and exhaustive tests are being carried out by fishing and yachting interests. The new cable is available in all standard rope sizes from ⅛" to 1" and special sizes may be obtained.



DRY CHEMICAL SYSTEM

(Use Key # 903 on Inquiry Card on page 77)

UNDERWRITERS LABORATORIES, Inc. has granted approval to the dry chemical piped system of fire extinguishment developed by the Ansul Chemical Co. The listing follows an exhaustive series of more than 1,600 tests, conducted over a period of five years.

With this system, automatic fire protection is provided against Class B and Class

C fire hazards by means of dry chemical, which is conveyed through pipes and expelled in the area surrounding the hazard. The approval means that now dry chemical piped systems can be installed to protect such hazards as paint dip tanks and spray booths, ovens, driers, oil quench tanks, flammable liquid pumping stations, transformer vaults, diesel and gasoline engines, generators, oil storage tanks, flammable liquid storage rooms, asphalt saturators and marine hazards. These piped systems have already been installed in the metal fabricating, aviation, petroleum, chemical, paper and automotive industries and in the electrical utility field. They provide for either automatic or manual operation and can be activated at the system or by remote control. Automatic systems may also be operated manually and for either local application or total flooding.

The automatic systems are operated either by pneumatic rate-of-rise type of heat detection devices or by electrically operated releases. Doors, windows, ventilation ducts, operating valves, etc. can be closed automatically by the system's nitrogen pressure. An electric switch energized when the system operates turns off fans and machinery and sounds alarms around the plant or in a central fire alarm headquarters. By using automatic selector valves, one piped system can protect two or more separate hazards. Dry chemical flows only into the piping that leads to the fire area involved.

SEALED ELECTRICAL CONNECTORS

(Use Key # 904 on Inquiry Card on page 77)

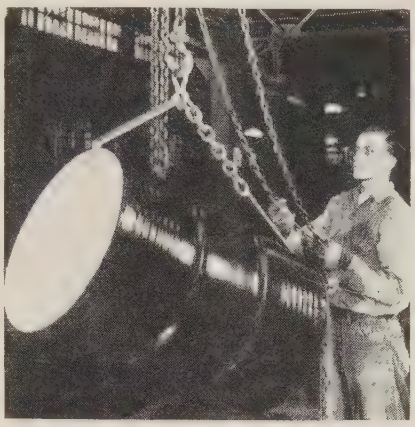
A NEW SERIES of electrical connectors are being introduced by Rodale Mfg. Co. under the trade-name of Flip Seal. New features of the UL-approved connectors include a flexible rubber lip over the female component of the connector which flips over the male component to insure a positive sealing and locking type action. At both ends of the connector the cable entrances are also provided with a sealing action wherein the cable entrances fit snugly around the wire. These actions seal out moisture, dirt, dust, metal particles, and other conditions which tend to interrupt the flow of current.

The connector components are molded of rugged phenolic, and completely encased in a rubber or Neoprene housing. According to the manufacturer, tests indicate that Flip Seal connectors are especially suitable where accidental damage, excessive moisture, accumulation of oils, gasoline and grease, and climatic conditions, exist and can cause harm to the required connection.

COLD METAL CLEANER

(Use Key # 905 on Inquiry Card on page 77)

A NON-FLAMMABLE solvent of low toxicity has been developed by Merchants Chemical Co., Inc. for cold type metal cleaning operations. Called "Chlorothene," the cleaner is said to have excellent solvency for oils and greases and to be rapid drying. It can be used on all metals, including aluminum, without corrosive effects and is also suitable for cleaning plastic molds. The product is soluble in acetone, benzene, carbon tetrachloride, methanol and ether.



NEW BARREL HOOK

(Use Key # 906 on Inquiry Card on page 77)

A NEW ALL-POSITION barrel hook has been added to the Safety Tool line of Ampco Metal, Inc. This utility tool has a sliding ring which can be locked between links. This feature allows the drum to be either lifted or tilted for emptying. Overall length of the hook is reduced from 47" to 42" providing for greater head-room when loading or unloading drums from storage racks.

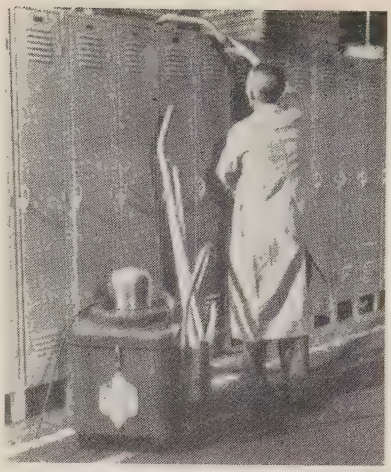
A satisfactory safety factor has been allowed above the 1500 pound safety test given each hook by the Company.

The new barrel hooks are made completely of Ampco Metal, a strong, durable, spark-resisting alloy. Their principal use is for handling drums of flammable or explosive materials, such as: paints, lacquers, thinners, high octane fuel, acetone, naphtha and many others.

HEAVY-DUTY VACUUM CLEANER

(Use Key # 907 on Inquiry Card on page 77)

A NEW HEAVY-DUTY electric vacuum cleaner for industrial and automotive use has been announced by The Black & Decker Mfg. Co. Called the No. 95 Vacuum Cleaner, this unit is claimed to have up to 20% more cleaning power, a dry capacity of 1½ bushels of dirt, and a wet recovery capacity of 13 gallons. It will move 75 cubic feet of air per minute through a one inch orifice, and has a maximum sealed suction rating of 70" of water. The motor, rated at 1¼ horsepower, is designed especially for vacuum cleaning. It is sealed



against dirt and water, and has its own cooling fan.

An outstanding feature is the super flexible, accordion type hose offered as standard equipment. This hose meaures 5 feet, but may be expanded to 15 feet. The enlarged hose diameter of 1½ inches makes possible the pick-up of larger objects without the danger of clogging. Additional features include a removable pushcart type handle with a storage section for attachments; swivel-type intake pipe that may be rotated 270 degrees; dust filter that can be easily removed for cleaning, or cleaned while attached to the machine, simply by shaking, permitting the dirt to fall to the bottom of the tank.

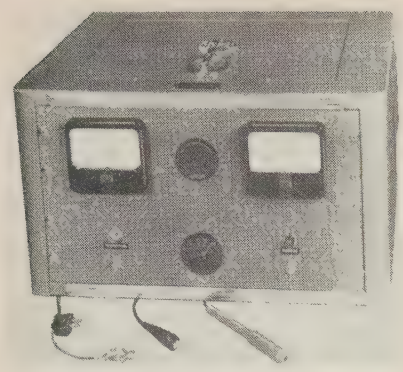
A locking device on one of the casters holds the machine stationary when desired. Accessories included as standard equipment are a 6" nozzle for upholstery cleaning and general purpose usage, a 6" brush, a crevice tool, and a hose swivel which can be rotated 360 degrees, or locked in any one of four positions. Offered as optional equipment are a 15" floor brush, a squeegee, and a 15' length of flexible hose, plus extension tubes of various shapes for specific applications. The universal motor is obtainable in 115 or 220 volts, with 125 or 240 volt motors available on special order.

MASTIC FLOOR DESIGNED FOR TRAFFIC LOADS

(Use Key # 908 on Inquiry Card on page 77)

A MASTIC FLOORING that meets the demand of modern industrial traffic requirements is a recent development of Flash-Stone Company, Inc. Trade-named "Liggite," this new industrial floor incorporates a new discovery "Liggite," a unique binder which increases stability without loss of tensile strength. Vehicular loads start and roll easily over Liggite. It is highly resistant to all traffic loads and does away with the drag on vehicular loads, common to most mastic floors.

There are no humps at the edges of the installation, because the material "feathers" well. Vibration noises are reduced. It is resistant to attack by grease and oil although it will deteriorate under long exposure to large quantities of petroleum products. Liggite requires a 24-hour waiting period after installation before it is ready for use.



DIELECTRIC TESTER

(Use Key # 909 on Inquiry Card on page 77)

A VERSATILE INSTRUMENT for dielectric testing up to 5000 V.D.C., and insulation resistance measurement up to 50,000 megohms is the Model 424 D.C. Hypot. Originally introduced in 1952 by Associated Research, Inc., it has now been redesigned for increased serviceability and ease of panel mounting. Applications are dielectric testing of electrical and electronic components, and insulating materials, and maintenance testing of rotating machinery and transformers.

Featured is a continuously variable output voltage of 0–5000 V.D.C. read on a large 4½" voltmeter, and output current ranges of 0–5/10/50/100 microamperes indicated on a 4½" microammeter, electronically protected against overload. The unit is housed in a grey wrinkle-finish steel case 22" x 14¾" x 12 5/16" with 5' output leads terminating in a Mueller clip and retractable tip prod, and is arranged for standard rack and panel mounting.

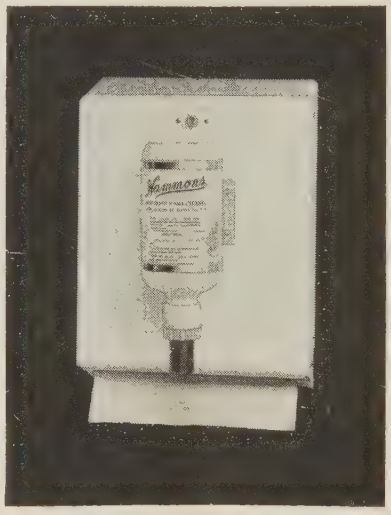
CLEANER & TOWEL DISPENSER

(Use Key # 910 on Inquiry Card on page 77)

A NEW APPLIANCE which combines a patented, waterless liquid hand-cleaner dispenser with attached paper towel dispensing cabinet is said to simplify installation of hand-cleaning facilities at any work area in plants and service shops.

Two models are available, both for wall mounting: a single metering dispenser on a single-fold towel cabinet, and one with choice of single or twin-metering dispensers on a double-fold towel cabinet.

Each quart-size dispenser provides approximately 300 hand cleanings, with each filling accomplished by up-ending the polyethylene container on its swivel bracket and refilling with liquid. Only a waste receptacle is needed for a complete hand-cleaning station with the new hand-care unit of Hammons Products, Inc.



ALL PLASTIC GOGGLE

(Use Key # 911 on Inquiry Card on page 77)

MADE OF PLASTIC, this lightweight goggle affords wide angle vision and may be worn over prescription glasses. It is of one-piece construction with moulded rubber binding to fit natural contours of the face. The elastic head band insures a snug fit and all-day wearing comfort.

Available from General Scientific Equipment Co., it protects against flying particles, sparks, splashes, chips, dust, glare—in countless jobs in factories, foundries, shops, laboratories, mines and quarries. Available with clear or green lenses.

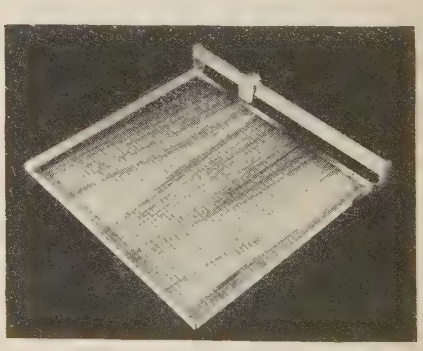
What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the opposite page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it on the Inquiry Card.

Key Number	Subject
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti Fogging Equipment
104	Sweatbands
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
111	Safety Toe Shoes
112	Safety Boots
113	Wooden Sole Shoes
114	Anti-Slip Soles
115	Oil-Proof Soles
116	Welding Helmets
117	Welding Curtains
118	Protective Skin Creams
119	Skin Cleansers & Soaps
121	Sanitary Drinking Cups
122	Athlete's Foot Control
123	Salt Tablets
124	Noise Control
125	Antiseptic Medication
126	Burn Medication
127	First Aid Kits & Supplies
128	Stretchers & Litters
129	Resuscitators

Key Number	Subject
130	Portable Ventilators
131	Dust & Fume Collectors
132	Carbon Monoxide Control
133	Fire Extinguishers
134	Safety Cans
134A	Extinguishing Ash Trays
136	Alarms & Warning Lights
137	Safer Solvents
138	Flammable Liquid Pumps
139	Explosion-Proof Lights
140	Electrical Insulation Testers
141	Anti-Slip Flooring & Steps
142	Anti-Slip Waxes & Finishes
143	Floor Cleaning Products
144	Floor Machine Equipment
145	Oil & Grease Absorbents
146	Paints
147	Ladders & Safety Devices
148	Scaffolds
149	Work Platforms
150	Fluorescent Lamp Guards
151	Machine Guards
152	Power Press Feeders
153	Safety Signs
154	Aisle Marking Equipment
155	Safety Awards & Emblems
156	Employee Safety Guide
157	Hand Tools



SAFETY TRIM BOARD

(Use Key # 912 on Inquiry Card on page 77)

THIS NEW TYPE of paper trimming board eliminates the hazards associated with the chopper-blade trim board. Made by Zeus Rolcut Co., this new board utilizes an enclosed rotating wheel cutting blade that travels on a rigid I-beam track, for safety, accuracy and long service life. The wheel is self-sharpening and is covered by a metal housing.

The trim board can be used for paper, film, plastic and other sheet materials. It is suitable for general office use, printing and engraving plants, photography studios, libraries and schools. Cutting boards of larger sizes make industrial paper cutting more efficient and less hazardous. Available in six sizes.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

PERSONAL PROTECTION

Respiratory Protection 271
American Optical Co. This fully illustrated and unusually informative 30-page brochure describes many types of approved filter, cartridge and air line respirators and also accessory devices, such as hoods, goggles and shields. An excellent chart lists various chemical and dust hazards and shows types of respirators that are suitable. Includes section on how to clean equipment.

Lens Anti-Fog & Cleaner 272
The Buckley Corp. Small folder describes a combination lens cleaning and anti-fog liquid, showing uses in industry, offices, sports and home. Folder illustrates three types of packaging for the liquid: pocket capsule, plastic bottle for bench or desk, wall dispenser cabinet.

Water Repellent for Shoes 273
Dow Corning Corp. Small bulletin gives essential data on a silicone treatment to make shoes and other leather products water repellent. Explains how the silicone penetrates the leather but lets air continue to enter, and how the liquid can be applied.

Crown Strap for Hard Hats 274
Willson Products, Inc. This illustrated mailing piece shows why the inner suspension design of hard hats is important in providing positive head protection. Describes a cushioned pneumatic head band and a crown strap that provides stable support.

Work Clothes 275
Resistall Work Clothes, Inc. An illustrated 8-page catalog features a varied selection of industrial apparel made of DuPont Orlon and Union Carbide Dynel, which make the clothing more resistant to deterioration by chemicals than natural-fibre fabrics. Includes laboratory reports on effects of specific chemicals.

Protective Clothing 276
Wagco Products, Inc. Illustrated bulletin shows various types of rubber, plastic or fabric hoods (with or without air line connection) safety sleeves, aprons, hand pads, gloves, jackets, capes, spats, etc.

Sole Selector 277
Gro-Cord Rubber Co. This convenient sole selector enables safety engineers, manufacturers and retailers to determine instantly which type of work shoe sole has the best safety, comfort and wear qualities for any of 50 basic industrial jobs.

Safety Goggles & Equipment ... 278
Dockson Corp. A well illustrated 42-page catalog describes and illustrates a varied line of eye and head protection products. Includes valuable reference materials on the selection of lenses and covers many types of protective goggles, shields, welding helmets, respirators and hard hats.

FLOOR MAINTENANCE

Better Floor Care 279
Multi-Clean Products, Inc. Interesting 8-page broadside describes and illustrates a full line of floor machines and maintenance products. Also explains four points for better floor care and includes a liquids chart describing 24 liquids for all types of floors.

Stair Treads & Thresholds 280
Wooster Products, Inc. A new 12-page illustrated catalog shows a complete line of anti-slip metal stair treads and thresholds, including abrasive-surfaced iron, aluminum or bronze; abrasive-ribbed aluminum or brass; and extruded aluminum or brass. Other items shown are metal window sills, trench & hatch covers, and curb bars.

Non-Slip Floor Finish 281
Shralyte Co. Folder gives pertinent data on a U.L. listed emulsified plastic floor finish which contains no wax, is non-flammable & nonslip and requires no buffing. Also described is a wax and oil remover for floor maintenance.

GUARDING EQUIPMENT

Table Saw Guard 282
Brett-Guard Co. An all-purpose guard and guide for woodworking table saws is described in this 1-page bulletin. Of revolutionary design, the new guard is shown in line drawings as used for a wide variety of sawing operations, including mitering, rabbeting, tenoning, dadoing, etc.

Automatic Centering Reels 283
F. J. Littell Machine Co. Well-illustrated catalog section of 12 pages outlines the features of various types of automatic centering spindle reels for feeding metal coil to presses and other machines. Specifications for the models included.

Drop Gate Press Guard 284
Searjeant Metal Products, Inc. Transparent plastic drop gate guards, suitable for large and small presses, are shown in this bulletin. Utilizes a solenoid or air cylinder to prevent operation of the press until guard is in fully "down" position.

LADDERS & SCAFFOLDS

Step Platforms 285
Ballymore Co. Attractively illustrated folder shows many types of safety step platforms for low and medium heights. The rolling units with automatic position-locking devices have from 1 to 8 steps made of non-slip expanded metal grating. Higher models have hand rails and platform rails.

(Continued on next page)

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May, 1955 **Please send me the following free data (Remember to fill in your name and addr**

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Company Name _____

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Free Bulletins (Cont'd)

Ladder Safety Device 286
Safety Tower Ladder Co. Illustrated folder describes the construction, uses and safety features of a fall-preventing device for use on fixed ladders. Unit permits unobstructed activity of user, but limits an accidental fall to 7 inches.

SKIN PROTECTION

Silicone Skin Cream 287
Siladerm Laboratories. A skin cream and an ointment containing silicones are described in this bulletin. The hand cream is to prevent contact dermatoses and allergies, while the ointment is for therapeutic use and as a dermatitis preventive under very severe conditions.

Hexachlorophene Bibliography .. 288
Sindar Corp. A completely revised bibliography of literature on hexachlorophene contains references and abstracts of 136 scientific and trade articles on this antiseptic ingredient for soaps and other products. Bulletin is well indexed into useful categories.

FIRE PROTECTION

Fire Pumps 289
Gorman-Rupp Co. Three models of portable fire-fighting pumps, for direct use or as boosters for truck pumps, are shown in this illustrated bulletin. Includes features and performance charts for the three types.

Tramp Iron Magnets 290
Eriez Mfg. Co. A 24-page booklet features ideas on how permanent magnetic separators can be used to collect tramp iron for fire prevention, and protection of products and machinery. Included are case histories of actual installations.

Fire Blanket 291
Cotton Goods Mfg. Co. An asbestos fire blanket and its self-storing container are described in this bulletin, which includes uses for the blanket and data on the wall-mounted canister.

Fire Resistant Hydraulic Fluid .. 292
Monsanto Chemical Co. A 20-page bulletin outlines the outstanding features of Pydraul F-9, a fire-resistant fluid for use in hydraulic equipment operating near possible sources of ignition. Particular attention is given to the fluid's safety, and it is also said to equal petroleum fluid in lubricity, stability and service life.

Alarm Systems 293
American District Telegraph Co. A 36-page illustrated booklet describes the many central-station services provided for customers in 650 cities in this country, including protection against fire, burglary and other hazards.

MISCELLANEOUS

Self-Sticking Signs 294
W. H. Brady Co. Illustrated in full color, this 16-page bulletin describes and shows numerous examples of safety signs that can be posted at the point of hazard. The backs of the fabric signs are already coated with an adherent material for easy application. Designs, colors and wordings follow ASA code and include radiation hazard signs.

Loading Dock Shield 295
Frommelt Industries. Illustrated folder shows uses for loading dock shields, that are collapsible and consist of metal frames covered with fire-, water- and mildew-resistant canvas to protect the movement of goods when loading or unloading trucks.

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FOR INDUSTRIAL ACCIDENT PREVENTION

THE safe worker really looks and acts it. He comes to the job with a feeling of security —and the standard of his work shows it.

The promotion of safety by Industry is a great accomplishment. It pays not only in safeguarding life and limb, but in higher morale, improved skills, better production.

STONEHOUSE SIGNS

Workers respond to safe conditions when guided by proper warnings and instructions. Keep telling them—with Stonehouse Signs that inform them of hazards and dangers. This is true accident prevention.

Write for our complete Catalog— 64 pages, in full color. It's free.

Stonehouse
SIGNS, inc. MANUFACTURERS • Stonehouse Bldg., 9th at Larimer
Denver 4, Colorado

"Signs Since 1863"

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For details, use Key # E-45 on card on page 77)

MERCUROCHROME®

for first Aid

Neglect may cause infection, which can be prevented by prompt use of Mercurochrome.

No antiseptic has been proved to be more effective than Mercurochrome.

Thirty-four years of extensive clinical and lay use has proved the value of this popular antiseptic.

Thantis LOZENGES

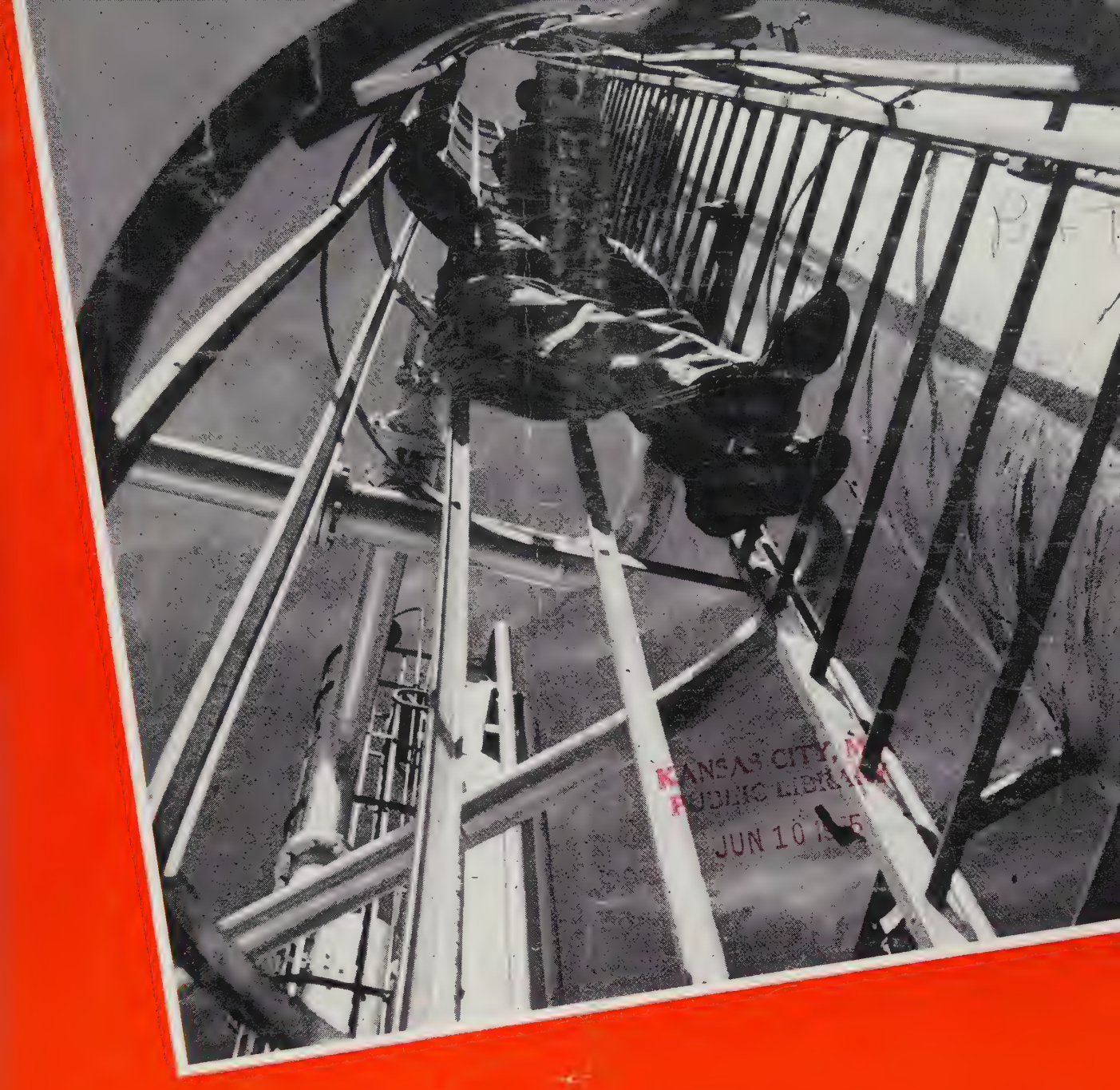
First aid for throat irritations...

Thantis Lozenges relieve pain promptly—reduce infection—act prophylactically.

Sore throats due to coughs and colds, if neglected, may result in lost man hours of work.

HYNSON, WESTCOTT & DUNNING, INC., BALTIMORE 1, MARYLAND

(For details, use Key # E-46 on card on page 77)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Safety Maintenance and Production

TY CENTS EST. 1901: AMERICA'S PIONEER MAGAZINE IN ITS FIELD JUNE, 1

Be Wise—Economize—Standardize—Simplify Stock Problems—with the

AO† R5000 RESPIRATOR*

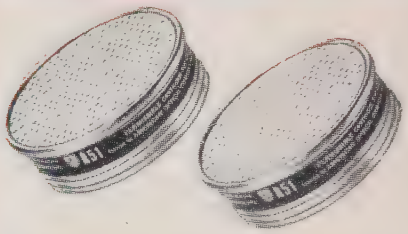
Here's *complete* respiratory protection in one "package"! If you have several respiratory hazards to control, the AO R5000 will save you inventory problems and money. This ingenious twin cartridge respirator converts to many types of protection quickly merely by interchanging the filters and cartridges. Ask your nearest AO Safety Products Representative.

R561 — For heavy duty protection against highly toxic insecticides such as Systox, Parathion, Aldrin, Dieldrin, Chlordane, EPN, Nicotine, TEPP and HETP. Respirator protects against all dusts, mists, metal fumes and organic vapors. Approved by U. S. Dept. of Agriculture.

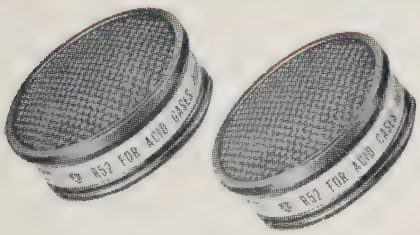
R563 — For heavy duty protection against metal burning fumes, acid gases, organic vapors—all dusts, mists.

R50 — For combination of all dusts, not significantly more toxic than lead. B.M.2156

R50A — used with R50, converts to a dust and mist respirator. Protects against all dusts not significantly more toxic than lead, pneumoconiosis-producing mists, chromic acid mists. B.M. 2156 includes B.M.2156A

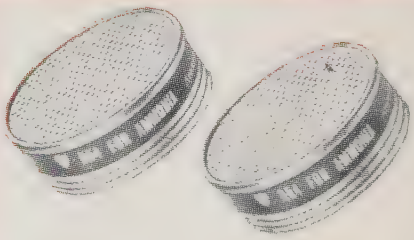


R51 — For light organic vapors and gases of paint spraying, degreasing, dry cleaning. B.M.2304

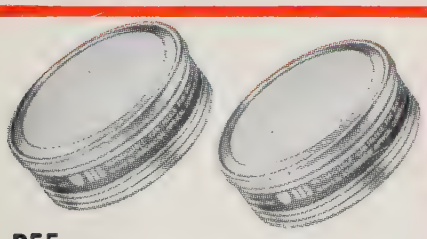


R52 — For acid gases, and mists of plating operations, pickling tanks, etc.

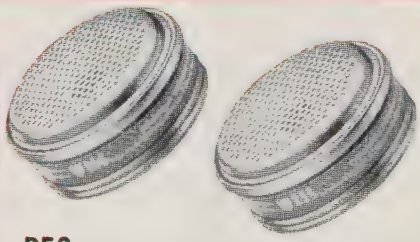
R53 — For combined acid and organic gases like carbon tetrachloride and acetic acid.



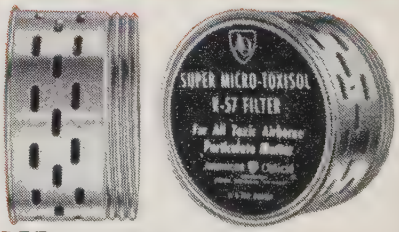
R54 — For protection against low or nuisance concentrations of ammonia.



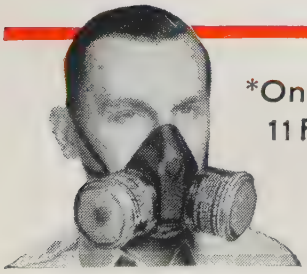
R55 — For those who are exposed to both organic vapors and all dusts not significantly more toxic than lead. B.M.2305



R56 — For fumes produced in welding, burning, smelting and refining. B.M.2163



R57 — For dusts, mists, fumes, significantly *more* toxic than lead including radioactive particulate matter.



*One Face Piece Takes 11 Filters and Cartridges

†T.M. Reg. by American Optical Company

American Optical
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For details, use Key # F-1 on card on page 75)

What to do about Noise!

This inexpensive GR Sound-Survey Meter Can Help You

to measure the Amount of Noise

to Locate its Source

The G-R Type 1555-A Sound-Survey Meter . . . compact . . . inconspicuous . . . portable . . . self-contained . . . and costing only $135 . . . reads directly in sound level and can be operated by anyone.

This meter is proving invaluable throughout Industry for preliminary surveys of sound levels to determine the amount of noise and to help indicate necessary steps for its control.

This inexpensive meter is the culmination of over 20 years of experience in design and manufacture by G-R in pioneering precision sound measuring apparatus.

In addition to making possible noise measurements toward protecting persons working near noisy machinery, this meter is being used widely to improve working conditions of office personnel; to increase comfort in hospitals, residential sections, schools and recreational areas; and to improve the performance of industrial equipment and household appliances.

The G-R Sound-Survey Meter is very simple to operate. It easily fits the palm of one hand. The noise-level control can be operated by the thumb alone. Readings are in db over the range of 40 to 136. Calibration is accurate, reliable and stable. The instrument is operated from self-contained batteries, readily obtainable.

This G-R instrument can well be the answer to your noise evaluation problem. We would like to send you complete information about it and many other G-R noise and vibration and analyzing instruments. Just write for the SOUND LEVEL BULLETIN.

WE SELL DIRECT—Prices are net, FOB Cambridge or West Concord, Mass.

GENERAL RADIO Company

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(For details, use Key # F-2 on card on page 75)

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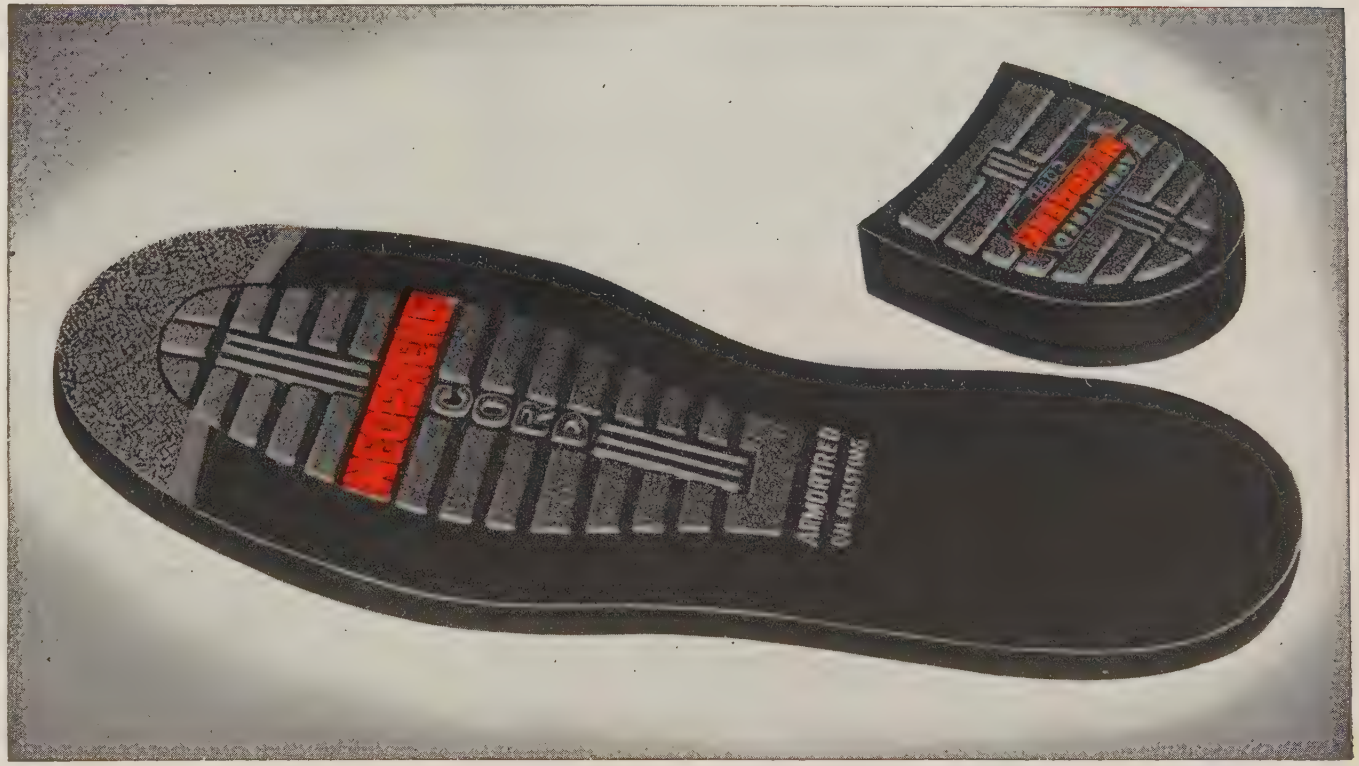

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There is no short cut to quality

MANUFACTURED AND DISTRIBUTED BY **QUABAUG RUBBER COMPANY** NORTH BROOKFIELD, MASSACHUSETTS

(For details, use Key # F-3 on card on page 75)

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Safety Maintenance and Production

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JUNE, 1955 **EST. 1901**

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★ CAMEL IN THE TENT

LIKE THE CAMEL who put his nose into the tent and gradually inched his way in until he dislodged the rightful occupant, U. S. Senate Act. S.1091 seems innocuous on the surface.

As pointed out on this editorial page last month, the act sponsored by Senator Smith of New Jersey with the approval of seven other senators is nothing short of Federal control over the entire safety movement. As such it completely negates the incalculable contribution of the various states as well as private enterprise made to the vast gains in accident prevention.

The cooperation of the Federal government has been one of the bright spots in the crusade toward the goal of greater safety. But this cooperation is very different from the implications of Senate Act. S.1091 which seeks to place authority in the Secretary of Labor to investigate the operation of all state safety programs. Moreover, despite the cry for reducing the Federal payroll to hasten a balanced budget, a veritable army of so-called consultants and inspectors would move in flying banners of red tape to tell industry how to run its safety programs.

The chances for inefficiency, malpractice and, at the very least, an appalling waste of money are beyond all measure at this time.

Unless such men were placed under civil service, deserving democrats and rewarded republicans would be the means of paying off many a political debt with the inevitable cluttered-up payrolls.

★ ★ ★

Certainly it is agreed that absolute safety is a long way off but never before has American industry been more keenly aware of the advantages of safety. It is equally true that never before has industry done more about it. And this goes for the states as well as insurance companies.

The only possible conclusion to be drawn from this senate bill is that it is merely the old plan for extending Federal bureaucracy into a field now occupied by the respective states.

At this writing it is not too late to wire or write your Senator and Representative in Congress urging the defeat of this bill. If necessary the protest should go directly to the President urging Executive veto of any act passed by Congress which seeks to place industrial safety under the control of the Federal government.

Reviewing the history of the safety movement over the past fifty years, it would seem that the various states working with private industry can be depended upon to police the accident prevention program without intervention of Federal authorities whose ideas of economy and efficiency often deserve the jaundiced eye.

Let the camel get one foot into the safety tent and he soon will take over and knock down the entire structure.—H.A.

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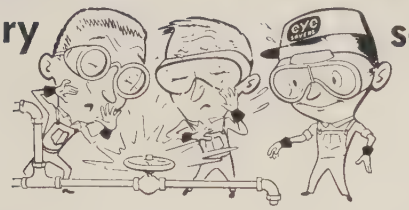

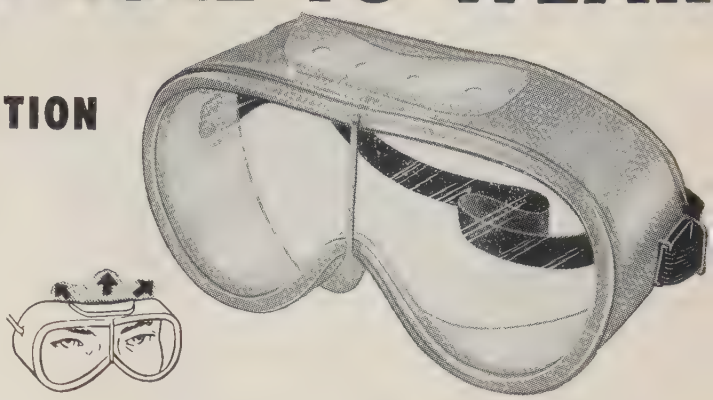

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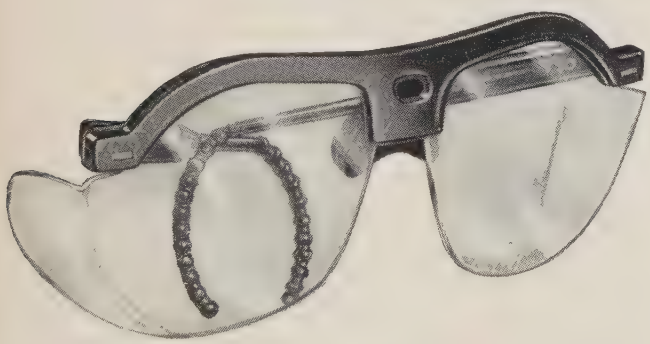

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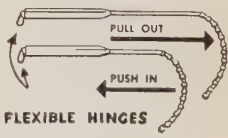

MODEL 415 plastic retrax temples (illus.)
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(For details, use Key # F-6 on card on page 75)

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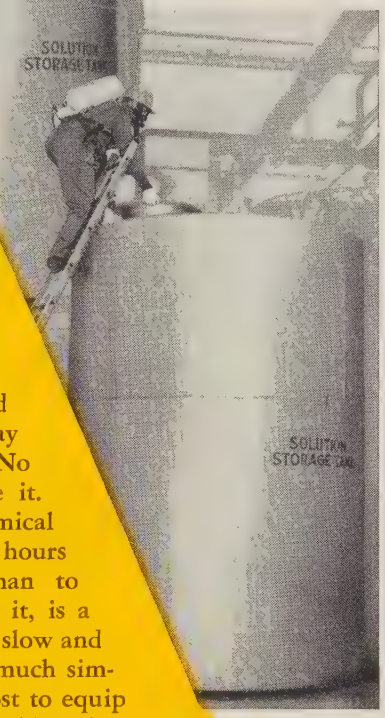

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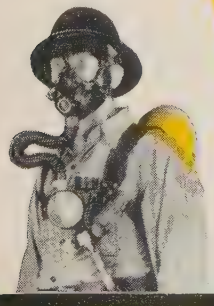

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(For details, use Key # F-7 on card on page 75)

THE FUTURE SHOWS

Richmond, Va. *June 2–4*

Twenty-first Annual Meeting Virginia Safety Association (Jefferson Hotel). William M. Myers, executive secretary, Virginia Safety Association, Room 302, 1103 E. Main St., Richmond 19, Va.

Hartford, Conn. *June 7–8*

Tenth Annual Connecticut Safety Society Conference (Statler Hotel). William G. Willse, Manager, National of Hartford Group, 1000 Asylum Ave., Hartford 15, Conn.

Hartford, Conn. *June 7–8*

Second Annual Meeting of The New England Accident Prevention Association (Statler Hotel). Everett W. Martin, President Pro Tempore, 65 Whitney Ave., New Haven, Conn.

Los Angeles, Calif. *July 12–14*

Second Western Plant Maintenance & Engineering Show (Pan Pacific Auditorium). Clapp & Poliak, Inc., exposition management, 759 Monadnock Bldg., San Francisco 5, Calif.

Cleveland, Ohio *Sept. 13–15*

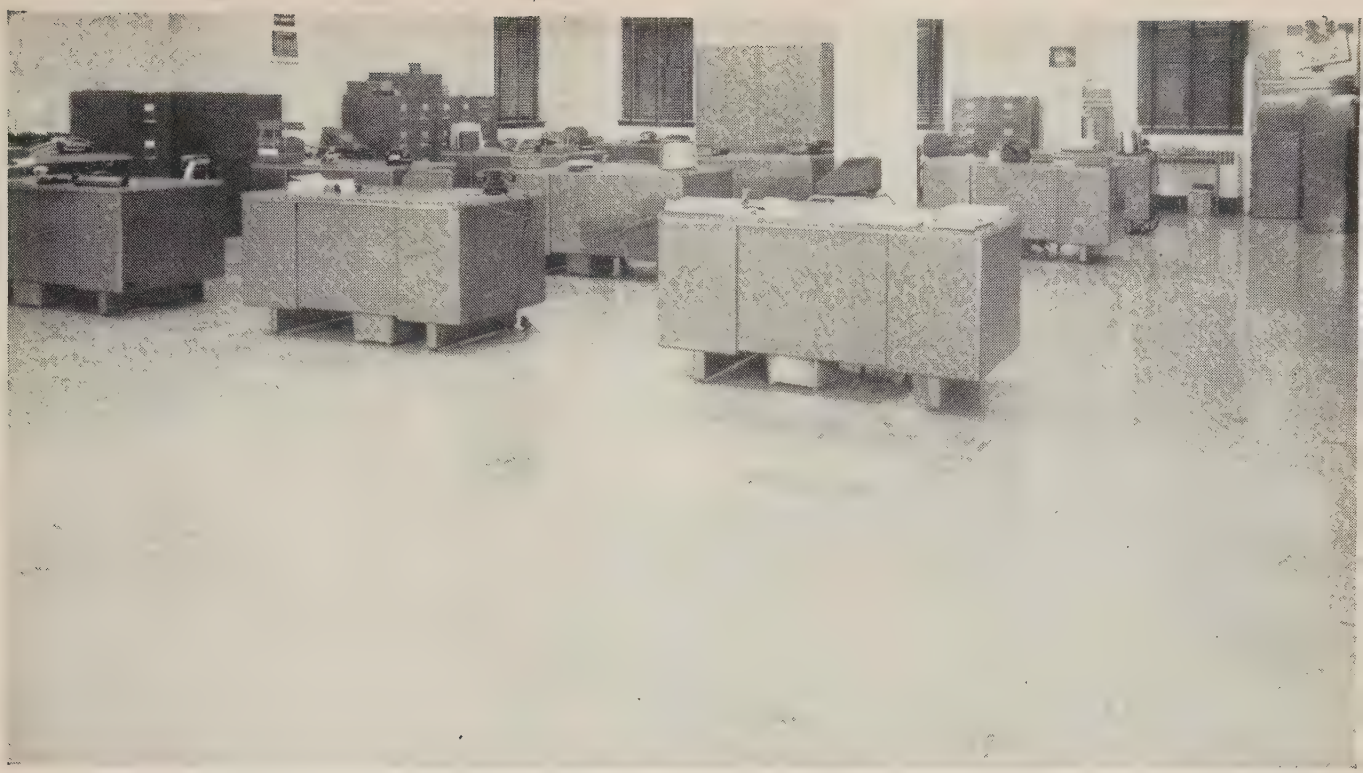
Seventeenth Annual Ohio State Safety Conference and Exhibit (Hotel Carter). Michael L. Stefani, General Manager, Cleveland Safety Council, 2073 E. 9th St., Cleveland 15, Ohio.

York Harbor, Me. *September 15–16*

Twenty-eighth Annual Maine State Safety Conference (Marshall House). Arthur F. Minchin, Secretary, Department of Labor & Industry, State House, Augusta, Me.

Chicago, Ill. *Oct. 17–21*

Forty-third National Safety Congress and Exposition (Conrad Hilton and other hotels). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.



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WATERPROOF WAX

Hard, tough finish defies water, wear and scuffing

Multi-Clean WATERPROOF FLOOR WAX (both "regular" and "anti-slip") gives your floors a lustrous, long lasting, anti-slip finish.

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ANTI-SLIP FOR SURE FOOTING

Underwriters' Laboratories have approved both Multi-Clean ANTI-SLIP WATERPROOF WAX and regular WATERPROOF WAX for all types of floors.

DEEP GLOW WAX

Self-polishes to a bright, clear gloss. Water resistant

Multi-Clean DEEP GLOW WAX, with its high resistance to water, is also recommended for all types of floors. It is especially suited for heavy traffic areas because it keeps its high lustre despite repeated moppings, water spotting and tracked-in mud or slush.

For any type of floor and under any traffic conditions, you can count on DEEP GLOW to give your floors the most beautiful self-polishing protective finish they've ever had! One coat applies easily and dries quickly to a high gloss. Rubber burns and scuff marks are readily buffed out.

Unlike other self-polishing waxes, Multi-Clean DEEP GLOW is almost colorless. This makes it the ideal choice for light-colored floors.

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City_____ Zone___ State_____

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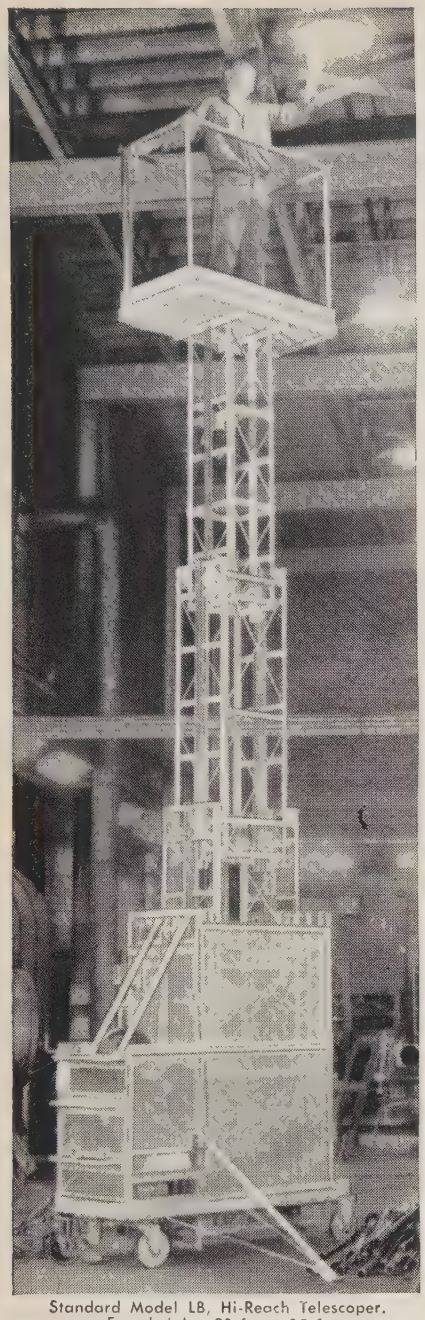

Standard Model LB, Hi-Reach Telescoper. Four heights 20 ft. to 35 ft.

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ENGINEERED FOR STRENGTH, STABILITY AND SAFETY

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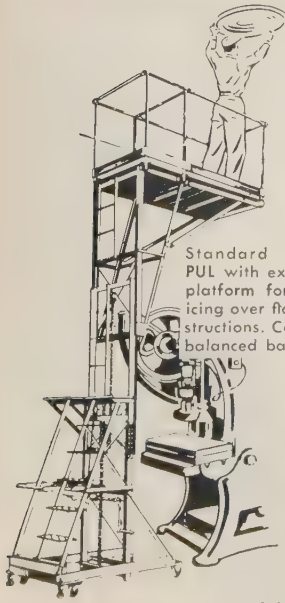
Standard Models available from 10'-9" to 35 ft. high, and custom-built units as high as 100 ft. if you like.

If you have an overhead service problem or need a special material handling machine, Economy can build it. And you can be sure of complete satisfaction in performance.

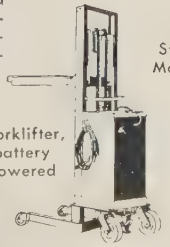
Economy representatives, trained in engineering, are located in all principal cities. Call one in on your overhead servicing, or material handling problem. Estimates made without obligation.

Write for new Catalog No. 55.

Forty pages of pictures and suggestions for special and standard machines.

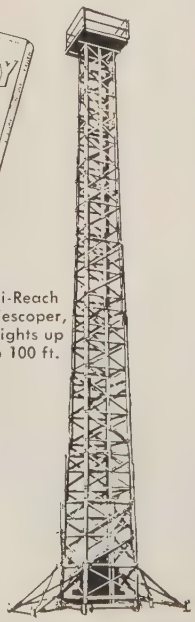


Standard model PUL with extended platform for servicing over floor obstructions. Counterbalanced base.



Worklifter, battery powered

Standard Model PUL



Hi-Reach Telescoper, heights up to 100 ft.

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(For details, use Key # F-9 on card on page 75)

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Adjustable Grinder Shield 70
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Automatic Exit Lights 69
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Hazardous Location Flare 71
Fire-Closing Drum Cover 73
Fire Retardant Paint 74

Stonehouse SIGNS

FOR INDUSTRIAL ACCIDENT PREVENTION

SIGHT is a gift to be treasured. Yet carelessness too often robs the worker of this, his priceless possession.

Impress upon your employees the vital importance of protecting their eyes. Wearing goggles is one very sure way. Keep telling them—with the right signs, either stock or special worded.

STONEHOUSE SIGNS

The loss or impairment of hearing is another hazard. Protect your workers' ears from shattering, harmful noises in the plant. A worker who can't hear well is a real accident hazard.

If you haven't our complete Catalog—64 pages, in full color—it's free on request.

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"Signs Since 1863"

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For details, use Key # F-10 on card on page 75)

GETTING MARRIED:

a worker to his safety glasses

Want a man happy with his eye protection? Then see to his eye comfort! Wed him to his safety eyewear.

Always beware ill-fitting safety glasses—*especially when the lenses are corrective.*

Eye comfort—and therefore, eye safety—depends on skillful fitting. The only way you get it is through the services of an optician or optometrist.

Whether you want him only for specifying and fitting—or to take over the whole responsibility of administering the corrective phase of your industrial vision program—he's a key man in your crusade for safety.

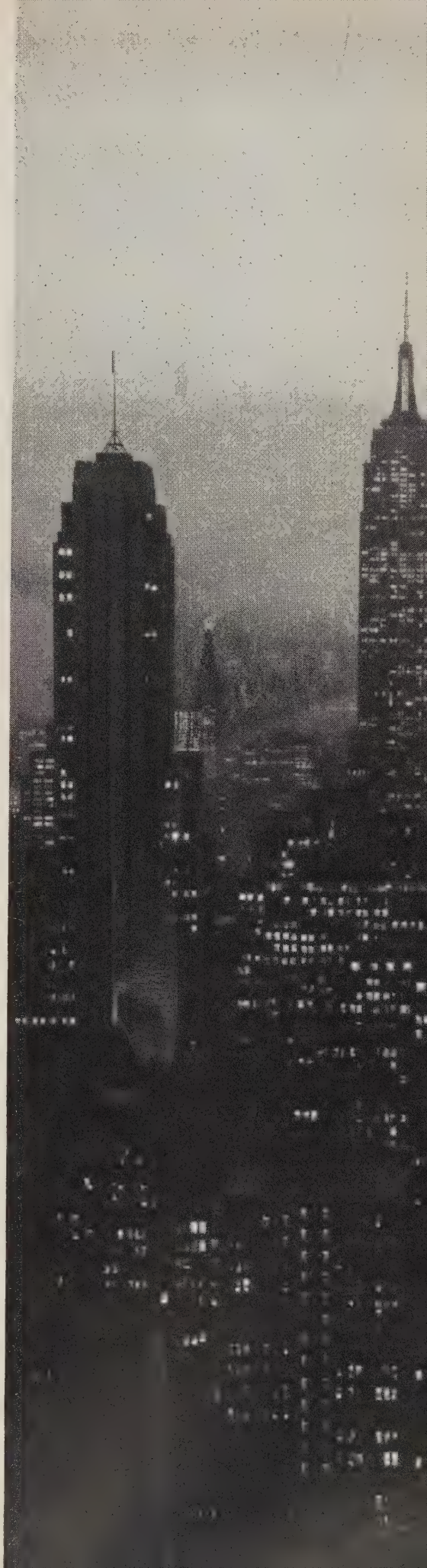
Your B&L representative also is a key man. Call on him to help you in any phase of your eye safety program.

BAUSCH & LOMB

SINCE B&L 1853

(For details, use Key # F-11 on card on page 75)

New York's 25th Safety Convention



THE LARGEST and most varied showing of safety equipment and accident-prevention devices ever assembled in New York was put on exhibition in connection with this year's 25th annual convention of the Greater New York Safety Council.

New York's Mayor Wagner proclaimed the week of the convention as Greater Safety Week to mark the silver anniversary of organized accident prevention work in the city and to welcome the 11 thousand safety experts from all over the nation who attended the 5-day convention.

The exposition overflowed this year, for the first time, from one floor of exhibition salons. Dozens of additional displays were set up elsewhere. The multi-million dollar accident-prevention industry used 150 display booths, 31 more than the previous record.

More New Safety Devices

Edward A. Fullarton, exposition chairman, said more new safety devices were produced within the past year, and more improvements made on standard equipment, than in any year since the war.

With new advances in fire-resistant protective clothing the "Man from Mars" uniform has become more that of a "Man from Hades." With added attention being given to the bad effects of factory noises, devices have been developed which draw the noise waves to themselves, break them up and absorb the noise before it can jangle the nerves or fatigue the minds of workers.

Manufacturers of safety work clothes have gone to new lengths to build styling and attractiveness, for both men and women, into what were formerly protective but not fashionable items of apparel. The steel toe-boxes of safety shoes are now concealed in dress oxfords—an ideal shoe, although not yet advertised as such, for a bouncer in a swank night-spot. For factory workers there are safety shoes of embossed weave and maple shade strong enough to keep a heavy machine or a truck off their toes.

There is clothing that resists a splash of molten metal, yet is lightweight and flexible. Hard hats, used by construction workers, look less like surplus war helmets, are light, comfortable and in gay colors. Among the more spectacular protective clothing was that

shown in the first American display of the European development of aluminized heat-reflective suits which allow the wearer to enter into or remain in the proximity of flame up to 2500 degrees Fahrenheit.

There were all kinds of new fire alarms, including one that goes off before the fire starts, as when a furnace becomes overheated. On a different principle an electronic "fireye" gives instantaneous warning of actual fire by "seeing" the flame before there are such secondary effects as high temperature or smoke. One company showed a new compound for giving first aid in the case of acid or alkali chemical burns without waiting to determine if the searing substance was acid or alkali. The new compound, which can be poured on the burned skin or into the eye, neutralizes the effect of both kinds of burns.

Supervisors!

Ask Yourself These Questions . . .

1. Am I really interested in the employes I supervise?
2. Do I genuinely respect them as human beings or do I secretly think they're not as good as I am?
3. Do I listen to employes without interruption until they've finished, or do I use the rapid-fire question technique so that they don't have a chance to express what they are trying to say?
4. Am I consistent or do I "make a production" out of a minor mistake one day and pass over it lightly the next?
5. Do I give instructions clearly, patiently, repeat them if necessary?
6. Do I correct a serious violation by a worker in private or do I "bawl him out" in front of other workers so his self-respect reaches zero?
7. Do I wait until I have all the facts, or do I "blow my top" immediately and get the facts later?
8. The $64 question: Do I set a good example?

This list of questions was presented by Edwin F. Ahern in a speech before the convention. For more of what he had to say on supervisors and safety see page 15.

Two firms displayed new kinds of protective ear devices, both for workers who are exposed continuously to high-intensity noise and those who must frequently enter and leave noisy areas. Another manufacturer has developed, after years of research, a device, 2 feet long, which is hung in series or in clusters in high-noise areas. The device is so constructed that it tends to break up sound waves, both high and low frequency, and attract and absorb or drain the sound by diffraction.

Fire extinguishers galore have many improved features, including lighter weight, easier triggering, and further-shooting and more effective streams. Some have pistol grips and trigger releases.

One company showed animated scale models of safety platforms for loading and emptying tank cars. As the cars roll up, hydraulic controls raise or lower the platform, keeping it always horizontal. Another firm displayed a "mechanical octopus"—a variable grip vise that holds pieces of any size and shape without danger of slipping. To the array of wood, steel and aluminum ladders there have been added this year fiber-glass ladders, both straight and extension-type. The laminated glass ladders, shatterproof, of course, are resistant to water, heat, rust and chemicals.

Shown also were multi-level wheeled cots, for the worker whom all the safety devices may have failed to save from accidents. The adjustable cots enable injured or sick persons to be moved, lifted to ambulance, and put into bed without changing body postures.

Almost unbelievably, a blind man was seen in one booth operating a rotary wood saw. He could do it in perfect safety with a new plastic guard adjustable to protect all sorts of sawing operations. Stamping presses and other machines operated with the latest advances in guards. Several types of self-charging battery emergency lighting systems, which go on automatically when regular power fails, were displayed. A myriad of skin protectants, from oils and salves to gloves, bear witness to the growing attention paid to the increasing hazards of industrial dermatitis.

Driver-training and driver-testing devices at the exposition gave free tests for visitors. For full details of the new safety products offered at the exposition see "What's New" on page 75 this month and succeeding months.

More New Safety Problems

At the convention itself, speakers brought new methods to bear on old and new safety problems. For example, Dr. Harold Jacobziner, Assistant Commissioner of Health, told the convention that accidents have assumed a more significant role as a cause of death and disability, with the control of communicable diseases and the advent of antibiotics.

In New York Dr. Jacobziner said accidents were now the leading cause of death in the age group one through 24 years, and the second cause of death among those 25 to 44 years old. With this in mind, the city's Department of Health has created a "Task Force on Accident Prevention" made up of representatives of such units and specialties as child health, school health, epidemiology, environmental sanitation, medical examiner's office, health education, public relations, district health administration and other units.

"Since the problem is a complex one," declared Dr. Jacobziner, "collaborative efforts of many skills and disciplines and the practical aspects of the team approach are stressed."

Industry can save itself accident costs and production loss through "built-in-safety"—starting with design of its new plants, the convention was told by J. K. Sundermeyer, fire protection engineer of the American Cyanamid Company. He suggested that in the case of large scale processes, as in the chemical and some other industries, it might be practical to start with pilot plant operations to develop the problems involving safety or accident before laying out the major plant.

"An effective loss prevention program," said Mr. Sundermeyer, "must

begin with identification of the hazard. The potential hazardous conditions can then be either eliminated or controlled. The most economical method available to control losses is by incorporating prevention into the original design. A system and procedure in safety and loss-prevention requires a consistent follow through during the three stages of design, construction and production operations.

More New Safety Solutions

Industry, which in general keeps comprehensive statistics on accidents, could prevent many of them by keeping records of "near accidents" and studying them, Dr. Ross A. McFarland, Associate Professor of Industrial Hygiene at the Harvard University School of Public Health, told a convention session on smaller industrial plants.

"One of the first steps in assuring safety on the job is to make an analysis of what is required of the individual and to study the more critical features of each job. Many accident potentials can be revealed by this procedure. Each type of equipment and its operation must be subjected to thorough study and interpretation in order to understand what is expected of employees. Techniques involving 'near accidents' are often revealing, and minor accidents should be recorded and interpreted," said Dr. McFarland.

He added that the one major difference between the handling of accidents by large and small plants was the use by smaller plants of "outside medical and safety services. This results in excessive time charges for minor injuries and delays in treatment," he declared. He said small plants would find it to their advantage to set up their own services as soon as possible.

Supervisors and foremen were advised to give themselves an 8-question analysis to see if they might be responsible for accidents "caused" by employes under their charge.

The thesis that failure to give ego-recognition to employes was an underlying cause of attitudes that resulted in many accidents was expounded by Edwin F. Ahern, safety director of the Hotel Taft and instructor at the New York University Center for Safety Education. He said that constant, alert observation of unsafe actions and follow-up with the individual employe by the supervisor was "certainly the core of a safety program. However, continued Mr. Ahern, management should also consider "the deeper, secondary causes of accidents arising from within the personality or working environment of the individual hotel worker." He said industrial psychological research indicated that eight out of ten employes who resigned from jobs today did so not because of pay or working conditions but because of inability to "get along" with a department head or supervisor.

Asserting that employes with such mental attitudes were more likely to be involved in accidents than others, Mr. Ahern proposed that supervisors try to find out if they are guilty, perhaps unconsciously, of fostering such attitudes.

"A conscientious supervisor listens to complaints," declared Mr. Ahern. "Even if unreasonable on the surface, they constitute a symptom of some real problem which exists beneath the surface."

More New Proposals

A proposal for easing the manpower shortage in safety engineering was offered by a woman safety engineer, Marguerite E. McCabe, assistant engineer for the American Telephone & Telegraph Company. The suggestion was: Train and use more women as safety engineers.

Addressing the convention's "Women at Work" session, Miss McCabe said women had proven their abilities as safety directors in "such typically masculine industrial fields as mining, petroleum and shipping as well as supervising motor vehicle fleets." A few of those women, she said, had previously won acceptance from men in their industries because of their technical skill but "most of the others had become safety directors by virtue of being on the right personnel job at the right time."

Their success in such jobs, she said, demonstrated the possibilities of training women in larger numbers for safety engineering. Women in such jobs, particularly where a large part of the working force is women, would have a tendency to reduce off-the-job as well as on-the-job accidents, Miss McCabe declared.

Women in industry are also less likely to have accidents than men, according to Robert A. McVety, safety director of Remington Rand, Inc.

Mr. McVety reported a study of compensation records at one of the company's plants in New York showed women, making up 45 percent of the factory personnel, had only 34 percent of the accidents. There is an area for further reduction of accidents among women by counseling on out-of-plant problems, Mr. McVety continued. He said a woman who ran a household and cared for her children before beginning her night's work on the late

(Continued on page 30)

This Man is Blind

. . . And Perfectly Safe!

One of the strange sights at the exposition was a blind man operating a circular saw in safety, thanks to a new plastic guard just put on the market.

LADDERS & SCAFFOLDS SERIES
next article in July

You Can't Reach

by **HAROLD G. ARNOLD**
Vice-President
The Bauer Manufacturing Company
Wooster, Ohio

IT IS THE USUAL THING for safety directors, purchasing agents and engineers to tell the manufacturer what's wrong with his product. They criticize, revise and sometimes refuse, until a product does meet certain established specifications. This is particularly true in the ladder business.

This is as it should and must be if industrial safety is to have real meaning. Just because a man produces a certain item does not mean he knows how to employ it effectively. While safety engineers are not always right, neither is the manufacturer. It must be remembered that a manufacturer must produce what industry needs to operate efficiently, economically and safely.

Once he obtains approval of the safety engineer and is ready to do business, it quite often happens that the purchasing agent will give the order to the manufacturer's competitor on a price basis. All the excellent cooperation between the safety engineer and the manufacturer is to no avail if the purchasing agent must buy at the lowest price. This is one of my criticisms of safety, for safety is never cheap from an original equipment standpoint. Still, it is less costly than an accident. Let's have a closer relationship between purchasing and safety departments.

Just as a chain is no stronger than its weakest link, a ladder can be no stronger than its weakest rung, or the poorest spot in its side rails. Regular inspection of your ladders is a must.

Try this simple test. Rungs of a ladder look pretty much alike and even if you can see them closely, it is difficult, unless you know a great deal about lumber, to pick out any flaws. The grain may be straight . . . there may be no apparent outward blemish . . . no checks, no knots . . . yet a light tap with a hammer will tell you much. You can distinctly hear the difference between the sound and weak rungs. With this simple test you know whether the ladder should be thrown out.

Test or Torture

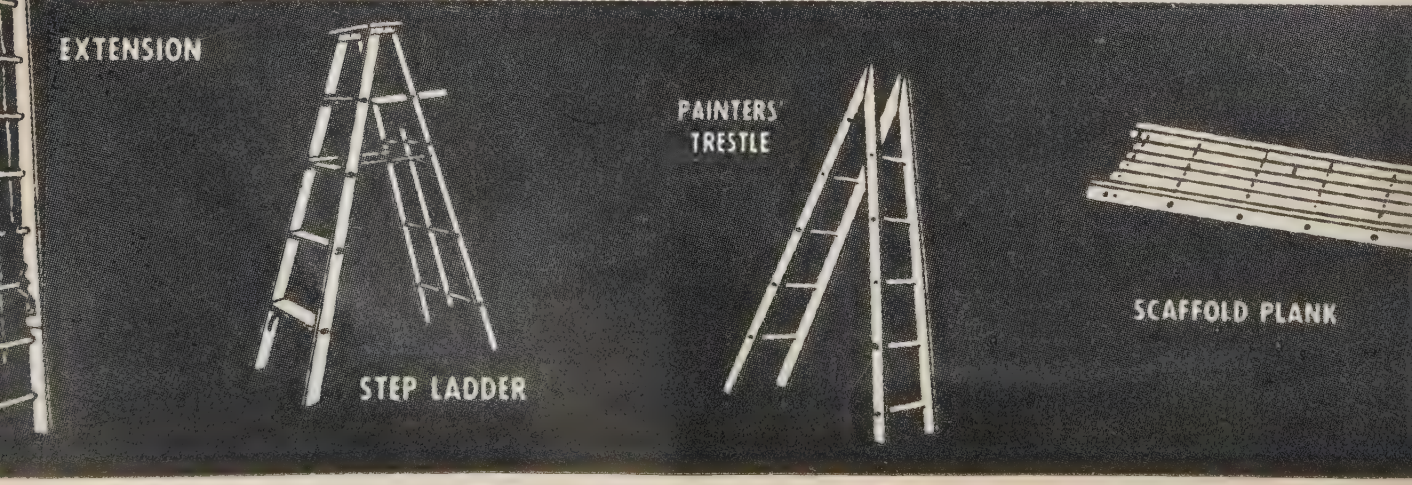
Don't test that ladder says Forest Products Laboratory, for any test loading beyond the design load may result in serious damage to the side rails. Sometimes a ladder is tested by supporting it horizontally on horses at the ends and having a man jump on it at the center. Such a test subjects a ladder to more severe loads than it was ever designed to carry.

One thing to remember about testing is that single and extension ladders are not designed to carry loads when stretched out horizontally. The design is calculated on the assumption the ladder will be used with base a distance equal to one-fourth the length of the ladder from the wall against which the upper end rests. If the base is out farther, the loading condition is more severe than that for which the ladder is designed. If the base is too near the wall, the ladder becomes less safe because it is less stable.

Ladder design does not provide a large enough safety factor to permit overloading by a factor of 3 or 4. The design assumptions mean that when the full weight of a 200 pound man is carried essentially by one side rail the rail is subjected to twice the design load. If a fully extended ladder is improperly used so that the base is one-half the ladder length from the wall, the stresses will be twice as great and the ladder will be subjected to twice the design load.

Which and When

Just knowing that a ladder is good does not necessarily eliminate ladder accidents. There is always the question of which ladder do we use and when. Just as you wouldn't use a tack hammer to drive a spike, neither should you use a household step ladder for an industrial requirement. You'd be surprised though, at the number of industries which do. Some will continue to use it, buying



Ladder Safety

Without . . . the Right Ladder Properly Used . . .

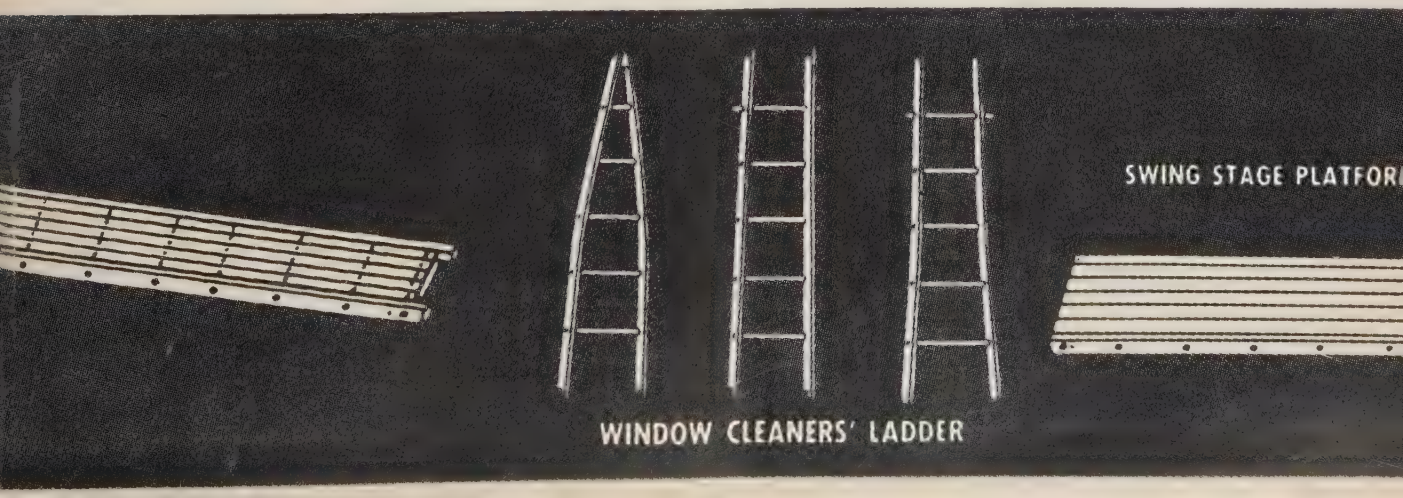
a ladder because it's available most anywhere and is cheap. Some responsibility for using the right ladder belongs to the dealer, mill supply house or salesman. The American Ladder Institute has published a booklet entitled "There's A Right Ladder for Every Job." This tells about the various types of ladders, their uses and includes lots of other information on care and use of ladders under all conditions.

Purchasing agents can hardly be expected to know one ladder from another. Ladders are not something they buy every day like nuts, screws, or bolts. A simple rule needs to be developed which can be applied in determining what type of ladder is needed for the particular job it is to perform. If we remember that ladders were not designed to support more than one person or to support heavy objects, then we know that if either of these services is required, then a ladder of special construction is called for. More than one person on a ladder or carrying a heavy object on it is more dangerous when the weight is mostly on one side, as is so often the case. This requires that the load be supported largely by one side rail. Failures with resulting injuries usually come from such over-loaded and mis-used ladders. By finding out in advance the particular department in which a ladder is to be used and the load exposure in that department, you can readily decide which type of step ladder will serve your need.

The American Standards Association ladder safety code includes Type III ladders, or the household variety. Since this is a general code applying to every type of ladder, obviously the household had to be included, but it is too light weight a ladder to have a place in industry. For most uses the Type I and Type II will answer industrial needs. One of the most important suggestions I can make is, that when special service is asked of a ladder, requiring one of heavier construction, find a ladder manufacturer to supply such a ladder. He can do it. It will be built in excess of all code requirequirements since these are the minimum safety needs.

Specifications and Practicality

You may have specifications of your own for ladders. Many industries do; and, perhaps, having ladders built to these specifications eliminates your particular problems on ladders expected to give extra service. Sometimes, however, such specifications, though well intended, have not been developed with consideration for the practical side of ladder manufacture. There must be a practical combination of engineering specifications with standard sizes



of materials and manufacturing methods in order to make a usable tool.

Strength and Weight

One large company with its own specifications has determined that step ladders for its use must be made of hardwood. No one questions the strength of hickory, ash or oak; but, while desirable in steps, the additional weight resulting from building an entire ladder of hardwood is not consistent with safety. Because of the stress placed on the side rails of a ladder in use, long, straight grain fibers are necessary; and, ordinarily, this is not the property of hardwoods. Static load on a block of hardwood supporting a column is entirely different than the stress load exerted on the side rail of a ladder. This particular industry must have a very difficult job purchasing the ladders it feels it needs.

The ladder manufacturer will always be very happy to lend his assistance in developing such specifications. It is being done every day.

The causes of falls from ladders can be classified into two categories: one includes the performance of unsafe acts, hurrying, and failure to use life-lines and belts where required; the other covers unsafe physical conditions under which the ladder is used, such as with cracked rungs or as scaffolding.

So Many and So Different

Ladders are used so frequently and for so many varied jobs, it is not surprising that their use directly or indirectly causes many workers to be injured in falls. The prevention of injuries due to falls from ladders is a problem of vital interest to all of us, since ladder accidents are frequent, often severe, and therefore costly. They commonly result in fractures of legs, ankles, arms, ribs and skull and sometimes a combination of these injuries. The employee who falls and gets only a sprained ankle or dislocated shoulder is fortunate. Fatalities are not infrequent.

Errors and Accidents

Most accidents are due to using ladders improperly. However, broken and slippery rungs, using damaged ladders, lack of safety shoes and ladders unsecured at the top are responsible for about one-third of all ladder-fall injuries. In one study, continued use of defective ladders was the cause of 11 percent of all injuries; one-half of all accidents could have been prevented by proper inspection and removal from service of questionable ladders for repair or destruction.

Right Use and Responsibility

The National Cash Register Company of Dayton maintains a ladder library. No matter where a ladder is used, or when, it is brought back to the library and receives an inspection before being put back in stock. Here is attention to ladders that really pays off.

Remember, there is a right ladder for every job and ladder manufacturers have a definite interest in you and your ladder problems. The American Ladder Institute is conscious of their responsibility in supplying ladders that are built to recognized safety standards. While no manufacturer needs to be affiliated with this group to build safe ladders, we believe that work already done in conjunction with the American Standards Association will further the interests of safety for everyone buying, selling or using ladders. We believe that a ladder should be built safe and strong, and stay that way.

Ladder Questions to Ask Yourself

A. Are there any locations in the plant where a fixed ladder should replace a portable ladder?

B. Where fixed ladders are used, is there any obstruction which might interfere with climbing or descending or against which workers might bump their heads?

C. Is a definite inspection program followed in regard to ladders?

D. Are portable ladders provided with ladder shoes to protect against slipping and is it standard practice to secure the top of the ladder before starting work?

E. Is the spreader of each step ladder in good condition?

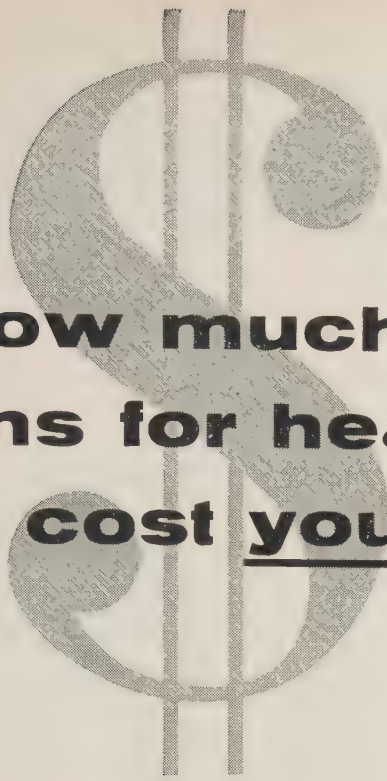
F. Are ladders properly stored when not in use?

G. Have employees been instructed on how to use a ladder, and reminded that they are not to reach out from a ladder to work?

H. Have they been told to move the ladder when necessary rather than take a chance of reaching unsafely?

From an address delivered at the 23rd Annual All-Ohio Safety Congress.

Picture by courtesy of U. S. Department of Labor; Drawings by courtesy of the Bauer Manufacturing Co.



how much could claims for hearing loss cost your company?

A flood of claims against companies by employees for occupational damage to hearing may now total over $2 billion, according to reliable estimates ☆ ☆ The fact that no such claims may have been filed against your company yet does not guarantee you will not be subject to them in the future ☆ ☆ Laws of 45 states already make accidental or traumatic loss of hearing compensable. About half of these states recognize gradual loss of hearing as an industrial disease Even if you are located in a state which does not have these laws, your company may be subject to damage suits for gradual loss of hearing.

how can you protect yourself?

A number of far-sighted companies include audiometric tests of hearing as part of pre-employment physical examinations. These give an accurate record of employees' hearing and may protect you against future claims for hearing loss that do not result from conditions in your plant.

These companies also test the hearing of their employees periodically. If your plant uses noisy equipment that can damage hearing, it may save you many dollars to give your employees periodic audiometric tests of hearing.

take the first step now!

Beltone Hearing Aid Co. has developed a new one electronic tube circuit Audiometer that makes hearing tests easy and accurate. It is a light-weight, low-priced, trouble-free instrument that your plant nurse can use to give hearing tests. If you get a Beltone Audiometer and start using it now, you may save yourself costly damages for hearing loss.

Free booklet

Send today for illustrated booklet that explains the new Beltone Audiometer. There is no cost or obligation.

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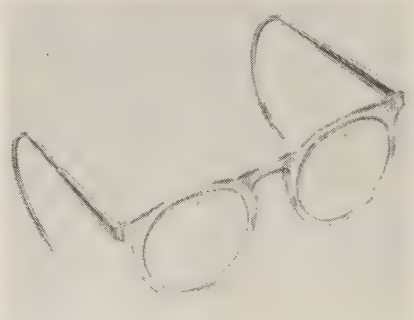
(For details, use Key # F-12 on card on page 75)

KEEPING UP WITH...

VENTILATED WELDING GOGGLE

THE PROBLEM of obtaining greater ventilation in a welding goggle without permitting penetration of light has been solved in the Penoptic Model 500 welders' goggle made by the Pennsylvania Optical Co. Air passages in the side shields admit an indirect flow of air to the inner cup area but prevent light penetration. Additional ventilation between the lens retaining rings and cup-walls provides direct air flow to the inner lens surface. Corrosion resistant aluminum retaining rings are threaded to allow easy lens replacement without tools. The brown opaque thermoplastic goggle has standard 55mm size welding lenses and cover glass, or with heat treated welding lenses and plastic cover glass.

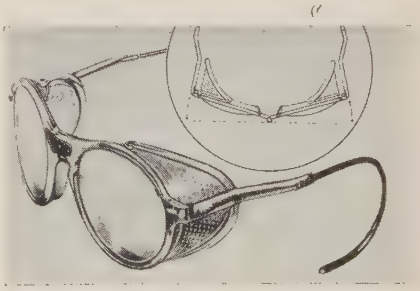
For details, use Key # EP-1 on free Inquiry Card on page 75.



COLORED FRAME GOGGLES

SPECTACLE GOGGLES, with attractively colored butyrate frames, are said by the Welsh Mfg. Co. to eliminate common objections to wearing eye protection. Available in Copper, Cordovan, and Pink Crystal colors. Strength and lightness of butyrate frame means long life and maximum comfort. Temples available in plastic covered, flexible cable or metal cored paddle style. Keyhold type bridge of butyrate rests easily on nose. Flat, 1.25 curve and 6.00 curve lenses available in clear or green hardened glass, or lighter weight plastic. Solid or perforated shields in clear or green acetate.

For details, use Key # EP-2 on free Inquiry Card on page 75.



HINGED-BRIDGE SPECTACLES

AN ENTIRELY new concept in eye protection has been developed by Willson Products, Inc. The hinged bridge of the Willson Contour-Spec is the new feature that sets this goggle apart from standard safety spectacles, permitting one size to fit all faces.

In addition to the all-around protection provided, Contour-Specs offer a seven-barrel hinge of rust and corrosion resistant nickel silver with automatic adjustment for any bridge width from 18 to 26 mm. Plastic strips for attaching side shields are molded as an integral part of the frame. This adds strength to the frame and provides full protective closure around the eye cavity. Side shields are available with or without perforations.

For details, use Key # EP-3 on free Inquiry Card on page 75.

EYE PROTECTION SERIES
other articles in April and May

Recent Developments in Eye Protection

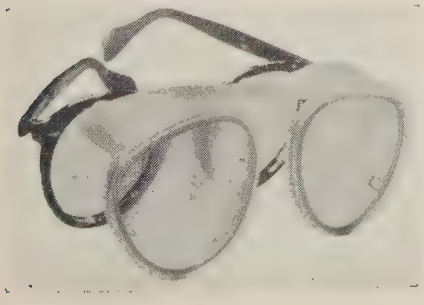
EYESHIELD FOR CAPS

A SKULLGARD EYESHIELD, designed for convenient cap-mounting on all types of MSA Skullgard protective headgear, has been announced by Mine Safety Appliances Company. The device, made of formed plastic, deflects flying particles which are hazardous to workers' eyes. In position, it offers unobstructed vision. The eyeshield is hinged so that it can be flipped down into position when protection is needed. It will remain firmly in either the up or down positions.

For details, use Key # EP-4 on free Inquiry Card on page 75.

CLIP-ON VISOR GOGGLES

A NEW TYPE of safety clip-on, called "Tuc-Over," provides shatterproof lenses in an unbreakable frame of tough, resilient polyethylene. The units snap on or off prescription frames and are held firmly in place by plastic clips which will not scratch frame or lenses.



This new lightweight eye safety equipment, made by Watchemoket Optical Co., prevents breakage or pitting of prescription lenses and can be used, with shatterproof green lenses, to cut out glare from sun or other light sources. Over-eyes protection is provided by the visor which extends back to the forehead to block out particles, dust, perspiration and glare. Lenses are available in light or medium green, and the frame can be had in a choice of translucent white or green.

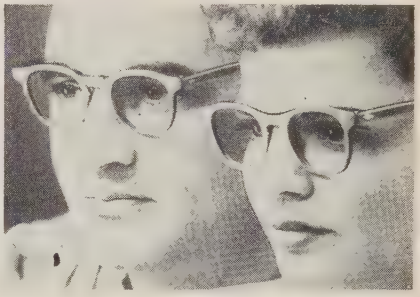
For details, use Key # EP-5 on free Inquiry Card on page 75.

ALL-PURPOSE MASK KIT

A GAS MASK KIT for millwrights and maintenance men has been introduced by Acme Protection Equipment Co. The equipment is designed to protect the wearer from any hazardous atmospheric conditions.

The kit includes (1) a Full-Vision face piece for dust and smoke protection; (2) a canister unit for respiratory protection against all gas hazards and visible smoke from fires; and (3) a supplied air hose connection for use with plant compressed air for use in any harmful, objectionable or oxygen-deficient atmosphere.

For details, use Key # EP-6 on free Inquiry Card on page 75.



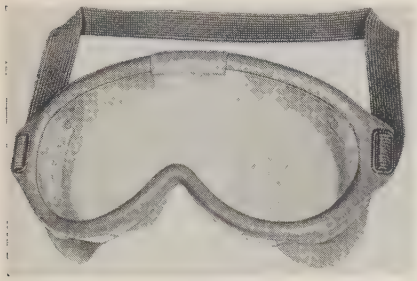
NEW LENS & NEW STYLING FOR SAFETY SPECTACLES

MARKETED UNDER the trade name of Styl-Ize, new lightweight industrial safety spectacles combine a shatterproof corrective lens of Optilite in modern shape and new color styling in the frames. Made by United States Safety Service Co., this new spectacle is said to be the first shatterproof prescription safety lens made in an exclusive formula of compounded resins. Its surface hardness increases scratch-resistance, and the lens does not yield sharp fragments when broken. It offers excellent light transmission and resistance to fogging. Both frames and lenses meet Federal Specifications.

The modern style frame is available in a choice of colors. Women's are in the fashionable "upsweep" style in a choice of burgundy or blue. The more conservative style for men comes in bronze or slate blue. Light-

weight Butyrate frames are non-flammable and non-sparking. The spectacles can be supplied workers in individual corrective prescriptions (single vision, bifocal) and plano.

For details, use Key # EP-7 on free Inquiry Card on page 75.

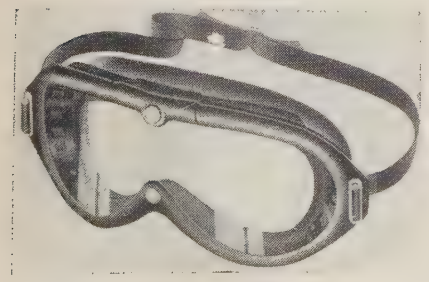


CHEMICAL GOGGLE

JUST ANNOUNCED by the Chicago Eye Shield Company is the new No. 100 Chemical Goggle designed for use by workers in dusty air or near splashing liquids. It is said to be perfectly contoured and molded from soft, flexible synthetic rubber to provide snug fit, complete protection, and day-long comfort. It is large enough to be worn over most glasses.

The wide transparent plastic window gives full width of vision, and fits in deep holding grooves in the soft rubber frame. It can be replaced in a few seconds. On each side there are baffled ventilator holes which permit a circulation of air and prevent fogging. The flat elastic headband is easy to adjust and holds the goggles securely in place.

For details, use Key # EP-8 on free Inquiry Card on page 75.



MULTI-PURPOSE GOGGLES

RUBBER-MOUNTED goggles, designed with a one-piece replaceable heavy .040 lens of impact resistant acetate, has been announced by the Welsh Mfg. Co. A special lens composition and .060 pre-formed lenses are also available on this "Multi-Purpose Goggle." The close fitting goggle has replaceable fabric filters; or wire screen filters on specification. It incorporates wide angle vision with comfort, as the strap terminals are out of line of sight and the flexibility of strap suspension delivers a better fit.

The goggles protect against chemical splashes, spray, dust concentrations and foreign particles.

For details, use Key # EP-9 on free Inquiry Card on page 75.

NEW COVER GOGGLES

A NEW COVER GOGGLE specifically designed to fit over modern large-frame prescription glasses has been announced by American Industrial Safety Equipment Co. Ventilation has been greatly improved and area of vision increased by this new 22% larger design, yet weight has been kept to a minimum by the use of the light, strong plastics.

EyeGard Imperial Cover Goggles use standard 50 mm round lenses and have aluminum rims and side shields.

Welders' Cover Goggles have baffled side shields to eliminate light and glare and are furnished with Federal Specification glare filter lenses.

Chippers' and Grinders' Cover Goggles have perforated side shields to provide increased ventilation and are furnished with clear lenses.

For details, use Key # EP-10 on free Inquiry Card on page 75.

FACE SHIELDS FOR HARD HATS

INEXPENSIVE EYE and face protection for wearers of safety hard hats and caps is available with the new Clip-On and Swing-Back type Face Shields, available from E. D. Bullard Co. Large, clear, tough plastic windows offer effective eye, face and throat protection for the wearers of both plastic and metal safety hats and caps. The Clip-On model is secured by spring steel clips that need only be pushed over the brim.

For the worker who needs face protection frequently, Bullard has developed the Swing-Back model (shown here) that attaches to a hard hat by drilling and bolting to brim. The aluminum hinged bracket swings easily to any desired angle or to the overhead position.

Both Clip-On and Swing-Back type Face Shields are heat formed to permanently hold their shape of .030 clear or green tinted Lumerith Acetate. Varying lengths are available. Both types offer complete protection against heat, liquid splashes, flying metal and wood fragments.

For details, use Key # EP-11 on free Inquiry Card on page 75.

SITUATION WANTED

Safety Director, 40, college graduate, 16 years' experience in safety and engineering administration. Excellent record. Currently employed with atomic weapons project of 10,000 persons at top salary in the field. Reply to: Box 655, % SAFETY MAINTENANCE, 75 Fulton St., New York 38, N. Y.

Vibration mounting felt pads give indoor rail clamps the necessary "give" and reduce vibration to a minimum.

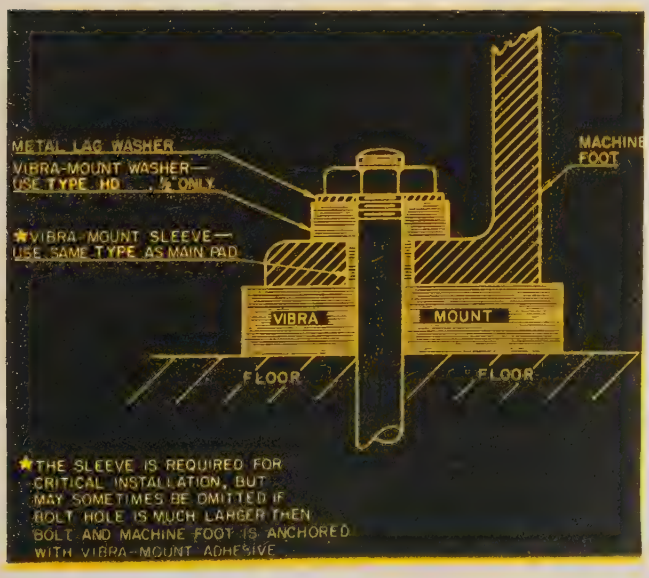
by **CHARLES M. FOGGETT**
Mechanical Engineer

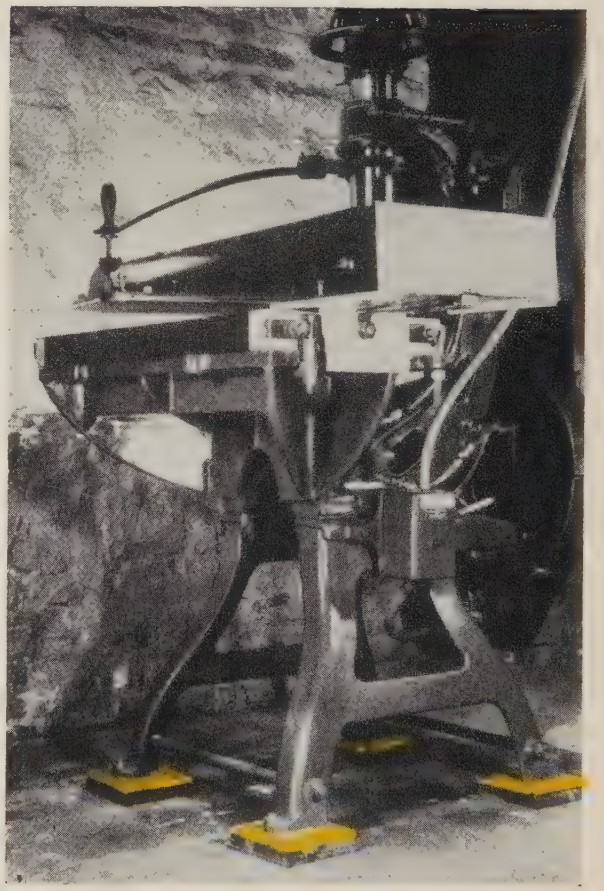
Shock-Absorbent Pads Cut Machine "Jitters"

VIBRATING MACHINERY is still an industrial "bugaboo." Modern design techniques have an increasing tendency to produce better balanced machinery, but the average plant still has many of its machines shaking floors, walls, nearby critical equipment and even personnel. The attendant noise factor also lowers operating efficiency. All of this can, and should, add up to considerable "shaking" of management heads, horizontally that is, with a resultant desire to do something about it.

To combat these undesirable conditions, a highly resilient, low compression, wool felt isolating material has been developed. It is ideal for vibration problems

(Continued on page 35)


METAL LAG WASHER
VIBRA-MOUNT WASHER—USE TYPE HO ... ½" ONLY
★VIBRA-MOUNT SLEEVE—USE SAME TYPE AS MAIN PAD
MACHINE FOOT
VIBRA
MOUNT
FLOOR
FLOOR
★THE SLEEVE IS REQUIRED FOR CRITICAL INSTALLATION, BUT MAY SOMETIMES BE OMITTED IF BOLT HOLE IS MUCH LARGER THEN BOLT AND MACHINE FOOT IS ANCHORED WITH VIBRA-MOUNT ADHESIVE



ABOVE—Vibration mounting felt used at all contact points between clicking machine and floor cuts vibration.

AT LEFT—Drawing shows heavy-duty vibration mounting used with lag bolt.

A Safety Success Story . . .

WE'RE ALL IN THIS

EVERY YEAR industrial accidents kill and injure tens of thousands of workers in plants and factories throughout the nation. These accidents are just as painful to the plants involved. The direct costs of medical expenses and compensation are considerable; but, like the iceberg with the greater share of its bulk hidden beneath the surface, the hidden costs in an accident-prone business can be staggering.

Not immediately noticeable are such important costs as the loss in earning power to the injured's family, the efficiency loss in his crew, the cost of breaking in a new man, the damage to tools and equipment, the time equipment is idle, spoiled work, materials ruined by fire, water, chemicals or explosives, and losses from failure to fill orders. There are at least 100 other avoidable hidden cost items that appear with almost any accident.

A bright example of industry at work to lay the accident spectre in all its expensive aspects is currently shining in a tannery in the picturesque mountains of Santa Cruz, California. The A. K. Salz Company system of accident prevention, based both on human understanding and mechanical devices, might well serve as a model for other industries.

Although the tannery, with its buildings painted barn red and its tan-bark paths bordered with a profusion of colorful blooms, looks like a pleasant bit of the serene old world transplanted, its busy equipment tans and finishes large amounts of leather. The processes involved in transforming a hairy, raw hide into gleaming, burnished leather are many and varied; so, indeed, are the possibilities of accidents occurring.

Processes and Dangers

In the beamhouse, the raw hides are drawn through floor level vats, containing lime and sodium sulfide to help remove the hair. This is done with ropes, a dangerous method as old as the Romans. The slippery hides are next placed in machines that remove the hair, and then "hand-scudded" with villainous looking knives resembling scimitars to remove fine hair the machines may have missed.

For forty days afterwards the hides idle in large open redwood vats absorbing tannins and oak bark sugars. Instances of workers having fallen into such vats are not unknow in the industry. The hides continue their progress to the wringer and splitting machine which splits them to various thicknesses. Many a tanner's finger has been lost in this operation.

After more tanning, drying and glazing, the hides are buffed and polished by a glazing jack, a power driven roller operating like a giant arm, with its share of safety hazards. Then the hides are split once more to meet buyers' specifications on another complex machine that is also adept at snipping fingers!

There is still another operation that can make tannery insurance rates jump. This is the harvesting of the tan bark itself. Every spring, when the sap runs high, ax-bearing woodsmen climb the mountain slopes of northern California and southern Oregon to peel the bark of the Lithocarpus densiflora, a species of tan oak found only in these regions. This bark is used in tanning a special saddle leather, imparting to it a distinctive golden-bronzed glow. As in all forestry operations, chances of injury are great.

In addition to these potential casualty causers, the A. K. Salz Company runs the gamut of risks common to all industrial enterprises: falls, heavy objects dropping, electrical accidents, fires and the like.

The exterior of the old, red tannery of the A. K. Salz Company, built in 1861, belies its modern accident prevention record. This quiet scene is really a picture of safety.

TOGETHER

That's some of us at the left . . . they're the safety committee (6 employees and 2 management members) who meet once a month to check our safety controls and maybe recommend some others.

Accident tolls were alarmingly high when young Norman Lezin became general manager in 1950. (He is now president of the firm.) He decided to throw the book at accidents and eliminate them entirely. His aim was threefold: to make the tannery a happier and a better place to work; to increase the plant's efficiency, and to reduce insurance rate charges. This program has paid off in every instance.

The Salz tannery has always been, of course, subject to rigid inspection by both the State of California and the firm's insurance agents. Safe engines and machinery, good housekeeping, and excellent health and sanitation facilities for employees were specifically provided. Mr. Lezin, however, has seen to it that his company goes far beyond the code requirements with a humanized safety program that is essentially one of communication.

Loss Ratio Drops

The result is that in 1954 the A. K. Salz Company cumulative loss ratio, (ratio of losses in compensation and medical bills to the premium paid) dropped to less than 6 percent on a premium of 8,500 dollars, including reserves which are subject to adjustment downward, further improving the loss ratio. Insurance men consider this figure remarkable for any industry, let alone the hazardous tanning business.

Hidden costs, such as losses in output, in time and materials, and lost income to workers' families, would multiply this figure probably 4 times or more. In addition, the company has reduced vulnerability for exposure to serious and wilful misconduct suits, which could be imposed by law in permanent or partial disability cases if the code had been violated. At the same time, it has merited a reduction in schedule rate, an item highly beneficial in reducing compensation bills.

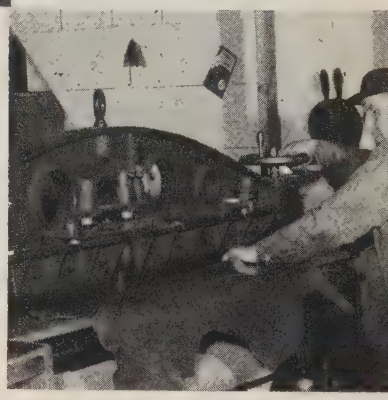
Sets National Record

The Salz tannery has, in addition, achieved the national record for the lowest accident rate of any tannery in the country. How was this accomplished? Through a thoroughly thought out and coordinated safety program.

Accident rates were too high and Mr. Lezin wisely placed the problem in the laps of the employees themselves. If the plant could go 150 working days without an accident, there would be a big dinner party with entertainment, all on the house. A sign by the tannery gate was changed weekly to show how many days the plant had already covered towards its 150-day goal.

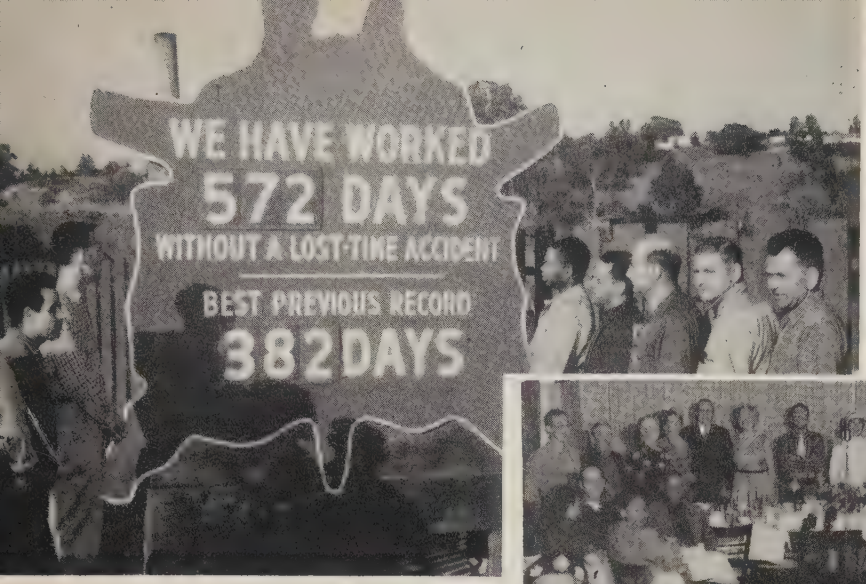
The first dinner, held on May 26, 1952, celebrated some 5 months without a lost-time accident and was a rousing success. From here on in, the plan began to develop.

Safety meetings were instituted in the plant lunch room and held approximately every 3 months. This meeting has become a family affair, with fathers and children in attendance. Two films are shown; a regu-



Here's one of us watching out not to split his fingers when he splits hide.

Two of us are transferring a hide from vat to vat (above). Other risky business is tanbark peeling (below).



When we look at our latest safety record (at left) we're pretty proud and pretty happy, too. Sooo . . . we throw a party to give everybody a little recognition and congratulate ourselves . . . and, not incidentally, to keep on promoting our own safety.

lar feature and a film on some aspect of safety. Refreshments are served, (usually by the auxiliary of a nearby church), and door prizes are awarded for both adults and children. If any man fails to attend without an excuse acceptable to the Safety Committee (6 plant employees with two members of management sitting in), he is not eligible to attend the big 150-day celebration dinners.

Safety a Social Affair

Practically everybody attends these safety meetings. They have grown to be social highlights. Management and employees enjoy and profit by them. The honor of being a member of the Safety Committee is highly regarded. Each member wears a badge as a mark of distinction.

The company has traditionally been a family operation, employee's sons often following in their father's footsteps. These monthly meetings, however, combining sociability with safety education, together with the gala 150-day celebration dinners and the activities of the company's soft ball and bowling teams, have led to a certain camaraderie and unity within the employee group that is difficult to find.

The company house organ, the Saddle Bag, runs a safety slogan in each issue, usually tied in with the safety subject of the previous meeting. Shortly after it is published, the editor telephones the home of one of the employees and asks his wife if she can remember what that slogan is. More often than not, she can, and wins a prize.

Safety meetings are not always concerned with safety in the plant. Safety in the home and first aid are covered, too. A recent program on bicycle safety was beamed at children and followed by a question and answer period.

Really Safety-Conscious

The point is that the company's tanners have become really safety conscious. They like to see that record mounting and resent it if anyone among them jeopardizes it. Last spring the tannery hit a new record (one that has since been passed). The 382 accident-free work days called for a gala banquet even more elaborate than usual. It was a costume affair, and characters ranging from the days of Dickens through the Gay Nineties to the Roaring Twenties were in evidence. A parody of "Dragnet" called "Safetynet," written and acted by men in the plant, was one of the highlights.

At this affair, for the first time, safety awards in the form of pins were distributed. In all, 70 pins were given out. Some were for one year without a lost time accident; others were for 2, 3 or 4 years and on up to 8, which is as far as company records went.

The Salz safety story is a heartwarming one. In a world of frictions and unrest, it is a happy example of the manner in which management and employees can work together to achieve a common good and; in so doing, become a better integrated unit, with great pride in their plant as well as in the product they tan and finish.

Pictures by courtesy of the A. K. Salz Company.

AND . . . even in the midst of the party, we don't forget that safety is a serious business. That's our manager (at the left) conferring with our insurance carriers about further safety controls, even though they're all still in their gay party costumes.

Emergency Vehicle Light Finds Use In Industry

A NEW ELECTRIC signal light for use as a visual warning or signal safety device is finding wide acceptance in industry, especially in plants with high noise-level operations.

The new light is modelled after the red flashing light used on fire, police, and other emergency vehicles. The original light was developed as a combination warning light to help clear a path through traffic for official vehicles and, at the same time, serve as a replacement for burning flares or signal flags at the scene of an accident or traffic tie-up to protect stalled vehicles from approaching traffic.

The new light uses the principle of a colored light beam revolving horizontally in a 360-degree arc, producing 60 brilliant flashes a minute, visible over long distances and with a high attention-getting factor. Created primarily as a warning device in industry to indicate dangerous work areas, or as a visual communications light in noisy shops or over long-distances, the flashing light has found a wide range of uses in factories, plants, shops, mills, and in a variety of field applications.

A Few Applications

For example, company sales records reveal that one firm has installed a battery of the lights along the path of a giant crane. As the crane moves along, the lights warn workers to move from its path.

Lumber mills in the Northwest are using the light to provide similar warnings when huge rotary saws go into operation; chemical firms, when vats of acid are poured; and foundries and steel mills, when hot metal operations are under way.

The new lights have been found to be practical as visual fire alarms in plants where sirens or bells or other audio type warning systems would be inadequate. The lights can also be used as part of a plant burglar alarm system, often frightening would-be burglars from the grounds as well as alerting watchmen who may be elsewhere on the premises.

A common use has been the application of the light as crossing warnings for in-plant railroad installations. Flying farmers and businessmen who own light planes have found the lights worthwhile supplements to required Civil Aeronautics Administration devices at small

fields and helpful in marking high obstructions or landing approaches.

As signalling devices, the flashing light is being used on building projects, farms and ranches, production lines or wherever long distances or noisy operations must be overcome. Connected with a timing device at a Cincinnati brewery, the lights flash on when certain aging operations are completed.

Small boat owners and marine enthusiasts have found the light ideal to mark piers and anchorages on unilluminated private piers, docks, and mooring points, and of course have used the light as a safety marker in addition to its function as a navigation aid.

An Unanticipated Use

Though the company was prepared to anticipate a wide range of uses in industry, it wasn't prepared for one use which an enterprising turkey raiser found for the versatile light. A Midwestern commercial turkey farm owner found the unit invaluable for scaring away marauding dogs, coyotes, and other varmints which had been plaguing his flocks.

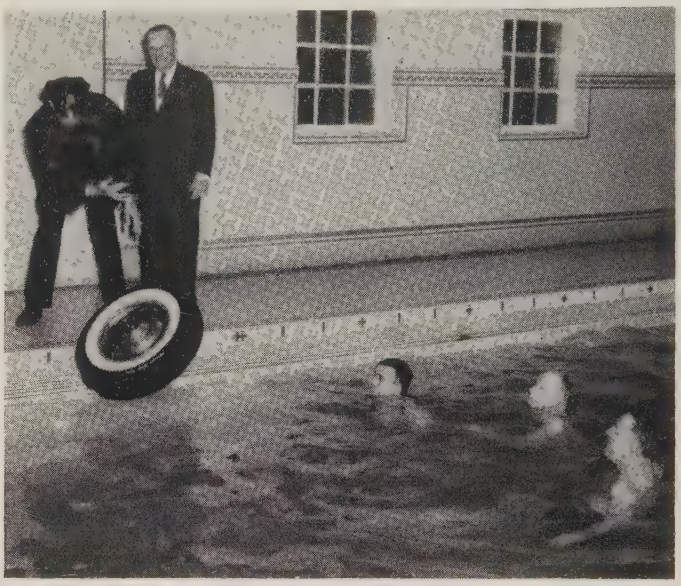
Inspector checks warning light in factory. When installed, the light will flash 60 times a minute to protect workers in noisy locations, at plant intersections, and against such dangers as overhead cranes.

The unit comes with green, blue, amber, and clear lenses, and can be equipped with a red lens for restricted use as a warning signal in locations not in conflict with official municipal or governmental emergency or warning lights.

Picture by courtesy of Federal Sign and Signal Corp.

A SAFETY IDEA

Police officer tosses auto wheel and tire to swimmers in demonstration of technique for motorists to save drowning persons.



Every Wheel A Life Preserver . . .

EVERY AUTOMOBILE DRIVER is a potential life-saver of drowning victims. Even if he can't swim himself, he has the necessary life-saving equipment right in the trunk compartment of his car—the spare tire and wheel.

Though not generally known, the average size inflated tire and wheel will support up to 6 adults in the water.

So, if you happen to be in the vicinity when a person or persons are in danger of drowning, don't hesitate; remove the spare tire and wheel from your car and get it to the victim. Push it toward him so that it will be between you and the victim; then he won't try to grab you. You can then pull him and the wheel to safety. Even if you can't swim, it will support both of you until further help arrives.

The Massachusetts Safety Officers' League is actively promoting this life-saving method throughout the state to educate safety personnel and the public. It is hoped that automobile manufacturers will cooperate in the future by installing quickly demountable brackets for spare tires and wheels.

A rescue demonstration was held recently by safety officers of the Newton, Massachusetts Police Department at the town's Y.M.C.A. before a large group of police officers and officials. A tubeless tire was used in the demonstration, illustrating the off-the-road ability of a safe tire to continue its "life-saving" qualities.

Picture by courtesy of B. F. Goodrich Co.

Electronic Air Cleaning vs. Air Filtering?

Fact:

Test Proves Westinghouse PRECIPITRON®

Removes Over 5 Times More Airborne Dirt

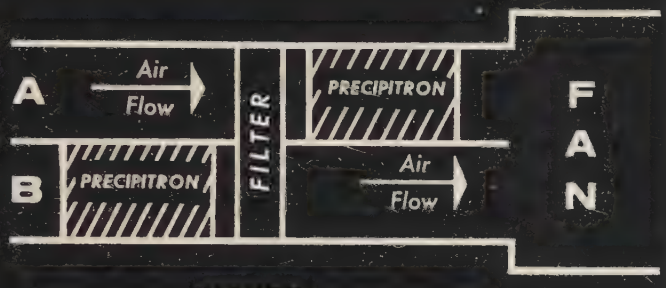


FIGURE 1

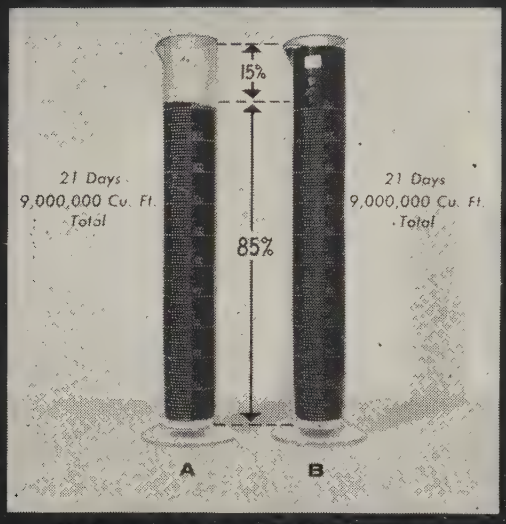


FIGURE 2

Dirt scraped from PRECIPITRON cells

How much better is PRECIPITRON Electronic Air Cleaning for removing dirt particles from air for ventilating and air conditioning? The answer is shown by this dramatic research test, comparing the performance of a conventional mechanical air filter with PRECIPITRON.

In the test, equal quantities of outdoor air were drawn through two identical channels as shown in Figure 1. In Channel A, air was first filtered and then PRECIPITRON-cleaned. A duplicate filter was placed in Channel B after the PRECIPITRON to balance the air flow.

After 21 days of operation, a total of 9,000,000 cubic feet of air had passed through each channel. The accumulated dirt was recovered from the PRECIPITRON collector cells in each channel, and carefully weighed.

In Figure 2, Column B indicates the performance of the two air cleaners in Channel B (PRECIPITRON first). The mechanical filter did not collect any measurable amount of dirt.

Column A indicates the performance of the two air cleaners in Channel A (filter first). **Only 15% of the dirt was removed by the mechanical filter.**

85% passed through and was trapped by the PRECIPITRON—over 5 times as much, and that portion contained damaging sub-microscopic particles.

MORE FACTS? Call your nearest Westinghouse-Sturtevant Sales Engineer . . . he's the "Man with the Facts" on electronic air cleaning . . . or fill in the coupon below.

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Please send more facts on your PRECIPITRON.

NAME AND TITLE .....

COMPANY .....

CITY ..... STATE .....

(For details, use Key # F-13 on card on page 75)

N. Y. Safety Convention

(From page 15)

shift at the factory was more likely to have an accident than the average employee.

Supervisors should take all these factors into consideration and should assign women for the jobs to which they are best suited, he said. Physical and personality differences among employees should be considered in job assignments, too. Blonde women, he said, were far more sensitive to skin irritants and more vulnerable to dermatitis than brunettes.

More Safety Progress

An actual trial of 10-years has "proved that blindness resulting from an industrial accident can be completely eradicated throughout the country by means of an enlightened progressive safety eye program."

Herman Sager, supervisor of the eye service section of the Sperry Gyroscope Company medical department, told how the company eliminated accidents that had caused loss of eyes or blindness. Six eyes were lost in 1943 in Sperry plant accidents before the company instituted its present eye protection and vision conservation program, Mr. Sager said. He reported that the company then spent 400 thousand dollars in the following 10 years for inception and maintenance of its in-plant eye program, and that not an eye was lost or seriously injured in the entire decade.

"Eighty-two pairs of smashed safety glasses have been accumulated, which attest to the potential eyesight loss during this period. Each pair of smashed safety glasses, displayed on bulletin boards throughout the plant, was considered by a committee (consisting of the medical director, safety engineer and eye service supervisor) as having saved one or both eyes from blindness," Mr. Sager continued. He said that accidents involving loss of 82 eyes would have resulted, according to standard estimates, in a total direct and indirect monetary loss of 1,680,000 dollars. Another phase of savings has been a 90 percent decrease in first aid eye cases over the 10-year period, resulting in an approximate savings of over 200 thousand dollars in direct costs.

"To achieve this success in eye safety, 38 thousand pairs of safety glasses have been issued in 10 years. Tactful and diplomatic enforcement by immediate supervision was necessary. I believe this was the secret for success," concluded Mr. Sager.

The problem of occupational loss of hearing goes back to the fifteenth century—in legend, anyway—but there is little exact knowledge on the subject today, an acoustical engineer told the convention. Quasimodo, the Hunchback of Notre Dame, who became deaf from ringing the cathedral bells, was named as the first famed victim of occupational noise by Jerome R. Cox Jr., of the sound research center of the Liberty Mutual Insurance Company.

"During the industrial revolution," said Mr. Cox, "the term 'boilermaker's deafness' was coined, but it is only within the past decade that society as a whole has become aware of occupational hearing loss. Court decisions in Wisconsin and New York focused attention on the problem rather suddenly, causing a period of hastily drawn opinions and confusion."

With authoritative findings on noise effects being reported more frequently now in scientific publications and with a magazine devoted to noise control having just made its appearance, said Mr. Cox, "it appears that accurate information on the occupational hearing loss problem will soon be available to all. But," he added "the effects of noise on hearing are still, however, an extremely complex problem. A multitude of factors must be taken into consideration in evaluating any noise exposure."

Industrial management was advised to hang out a big welcome for visiting firemen by Earl R. Wallace, safety engineer of Eastman Kodak Company. He told the fire protection session that industrial plants were dependent for help, even though they had their own fire departments, on the village firemen or those from the nearest city in the event of a serious blaze.

For that reason, said Mr. Wallace, village fire companies and "as many fire department chiefs, assistants and captains as you can get" from nearby cities should be taken on tours of the plant and familiarized with its operations and physical set-up. He added "many times men are injured and property is lost because industry has not deemed it wise or necessary to take into their confidence those people whom they expect to give them assistance."

More On-the-Job Safety Training

The importance of on-the-job safety training has been demonstrated in the building of the 3-mile-long Tappan Zee Bridge across the Hudson River from South Nyack to Tarrytown, James G. McFarland, safety engineer of the American Bridge Division of the United States Steel Corporation, told a convention session. Eight hundred bridgemen have been working for a year on the 60 million dollar bridge and there have been "only half a dozen minor fractures." The bridge, a link in the New York Thruway, is to be completed in the fall of this year.

Mr. McFarland said there was always considerable turnover among bridge workers and many men had to be hired without adequate training. Because of this, he said, there has been an intensive in-training program, with men being instructed in proper handling of tools, techniques and being checked regularly on safety performance. On a construction job of this sort, he said, individual responsibility for the safety of fellow-workers was more important than on many jobs where a mishap might injure no one but the person who caused it. He said this awareness was implanted in all workers.

Elevator operation in New York City has been made so efficient that the major safety device installed with each lift seldom, if ever, comes

into play. Joseph P. Dooley, Chief Inspector of Elevators for the New York City Department of Housing and Buildings, told the convention that this condition—seemingly the ultimate in desirability—caused a problem of its own.

"The fact that this device is seldom, if ever, used presents a problem in maintenance," said Mr. Dooley. He described the tests that the city required be made of all governor-controlled safeties. Such tests must be made annually or semi-annually, depending on the date of installation, with 50 percent of the contract load, at the lowest operating speed.

Mr. Dooley added: "The use of the word tests, in connection with these mandatory requirements, is frequently improperly interpreted. Actually these tests are for inspection purposes and are not intended to disclose the efficiency of the safeties. The efficiency of the safeties can only be determined under actual overspeed with the full contract load."

A Safety Code Change

The American elevator industry is dropping an old "safety" standby which seems now to be doing more harm than good. George H. Reppert, code engineer for the National Elevator Manufacturing Industry, Inc., told the convention that the 1955 edition of the American Standard Elevator Code prohibits the installation of all emergency unlocking devices on elevator shaft doors.

Ever since 1921 the code of safety standards had required the installation of emergency unlocking devices so that firemen and others requiring quick access to a shaft could open the door at any floor, even if the elevator cage was not at that floor. It turned out, however, that many watchmen and other building employes have been killed as a result of using the emergency keys. It was found out that in a real emergency a fireman could open a door with an axe just as fast, or sooner, than if he got the key.

Far from making bomb shelters obsolete or useless, the hydrogen bomb has increased the need for

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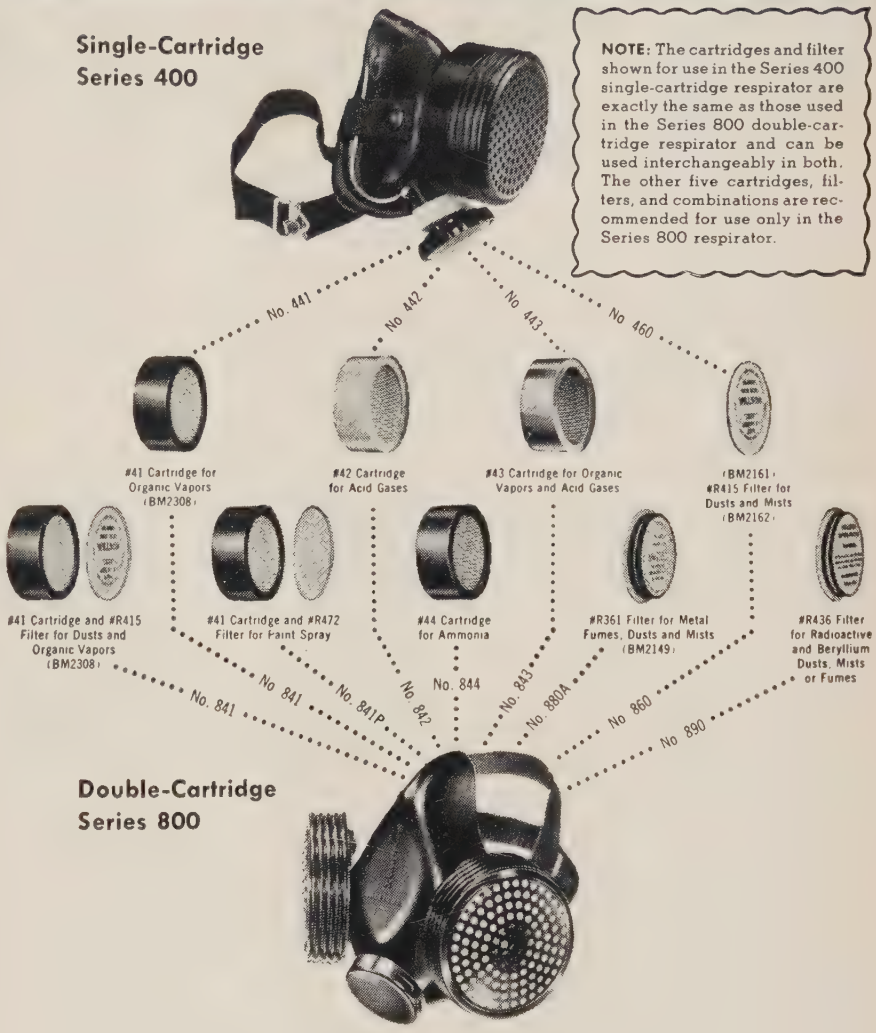
Single-Cartridge Series 400
NOTE: The cartridges and filter shown for use in the Series 400 single-cartridge respirator are exactly the same as those used in the Series 800 double-cartridge respirator and can be used interchangeably in both. The other five cartridges, filters, and combinations are recommended for use only in the Series 800 respirator.
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No 442
No 443
No 460
#41 Cartridge for Organic Vapors (BM2308)
#42 Cartridge for Acid Gases
#43 Cartridge for Organic Vapors and Acid Gases
(BM2161) #R415 Filter for Dusts and Mists (BM2162)
#41 Cartridge and #R415 Filter for Dusts and Organic Vapors (BM2308)
#41 Cartridge and #R472 Filter for Paint Spray
#44 Cartridge for Ammonia
#R361 Filter for Metal Fumes, Dusts and Mists (BM2149)
#R436 Filter for Radioactive and Beryllium Dusts, Mists or Fumes
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No 860
No 890
Double-Cartridge Series 800

These Willson Respirators are the first truly interchangeable types in the field. Neither style requires additional parts or accessories to make use of the cartridges, filters, or combinations indicated to be used with them.

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(For details, use Key # F-14 on card on page 75)

such protection, according to Dr. P. W. Swain, Consulting Editor of Power Magazine. The recent newspaper reports on the wholesale deadliness of "fall-out" from H-bombs had caused much confusion, he said.

"Fall-out is a terrible thing, but less so than fire and shockwave effects," Dr. Swain declared. "The explosion without warning of a small atom bomb would kill 90 percent of the unprotected population within a half-mile radius, called Zone A; 50 percent within a mile radius, in Zone B; and 15 percent within a one and a half-mile radius, Zone C," he added. In an H-bomb explosion, he noted Zone A would have a radius of 4 miles.

"Part of the nonsense promulgated about H-bombs," Dr. Swain continued, "is the idea that H-bombs make shelters useless. As a matter of fact, the advent of the H-bomb makes shelters and ordinary civil defense procedures far more important than before, because the H-bomb enormously increases the area of Zone B and C, where the majority of people will be and where ordinary defense measures may be extremely helpful. The combined areas of B and C zones are 8 times the area of the A zone.

More H-Bomb Information

"A recent example of confusion caused by news reporting was the effect of the published statement about fall-out from an H bombing. One paper imagined a bomb dropped on Washington and the fall-out killing practically everybody up to and including New York City, a total of 11 million people. For this to happen, a very large H-bomb, set off at a low level and a wind blowing in the direction of New York within 5 degrees and holding steady in that direction would be necessary, plus the fact that people who had several hours warning and were completely uninjured by the blast would insist on staying where they were without taking elementary protective measures.

"It would be reasonable to predict that in the case of large H-bomb explosion fall-out would not stand better than third place as a cause of death, being exceeded by both fires and shock-waves effects.

"The great need now is for everybody, and particularly all who are responsible for civil defense, to face the actual nature of bomb effects in the same coolly calculating way that a surgeon faces a difficult operation. The problem is a strictly practical one. Those who solve it—and it can be partly solved—will be practical men used to dealing with numbers and distance and areas and people."

What makes one road safer for driving than other roads?

A list of answers was given by Arnold G. Fisch, traffic and safety engineer of the New York State Thruway Authority.

Mr. Fisch told a convention session that at several places along the 427-mile Buffalo-to-New York City thruway "curves have been used intentionally where not actually needed, in order to break up the monotony of long, straight stretches and to help the driver maintain interest and concentration in the operation of his vehicle."

"This combination of flat grades and wide curves," said Mr. Fisch, "results in an unobstructed field of vision of over 1,000 feet ahead of the motorist at all times. The gentle hills eliminate the dangers and delays of steep climbs and help nullify excessive speeds normally built up on long, steep downgrades."

Explaining that the pavement width was designed to promote safe driving at expressway speeds, Mr. Fisch said the regular 4-lane Thruway had, in each direction an outside lane of 12 feet and an inside lane, for passing, of 13 feet. The extra foot for passing, he said, "gives motorists an added feeling of security, especially when passing large commercial vehicles."

He added that billboards had been banned along the Thruway, since they were a hazard to motoring.

A Long Island oil salesman's car, milk trucks in Brooklyn and White Plains, a Queens bakery truck, a New York City water supply maintenance truck and the village truck of Valley Stream, L. I. are among the safest motor vehicles in New York City.

These types were among the 9 grand award winners announced in the Greater New York Safety Council's 19th annual Inter-Fleet Accident Reduction Contest. A total of 449 fleets, operating 30,357 vehicles, matched their safety performances throughout last year. Winners in each group have been named on the basis of a check of company records and insurance reports.

An outstanding record among the nine grand prize winners was that of the Shell Oil Company's Long Island district passenger car division, with headquarters at Inwood, L. I. Its drivers covered 455,539 miles during the 12 months without accident. The other accident-free grand prize winner was the Incorporated Village of Valley Stream, with 103,050 hours of driving.

Other grand prize winners were: Borden's Farm Products Company, 3 chargeable accidents in 371,693 miles; New York Telephone Company, two accidents in 156,990 hours; Sheffield Farms Company, one accident in 752,900 miles; New York City Department of Water Supply, Gas and Electricity, 2 accidents in 460,610 miles; Sun Oil Company, one accident in 324,030 miles; Drake Bakeries Inc., one accident in 56,800 hours; Dept. of Welfare, City of New York, one accident in 32,952 hours.

More Emphasis on Off-the-Job Safety

America's increasing tribe of "Mr. Fixits"—and their wives—were warned today of a horde of home repair hazards. The convention was told that careless tinkerers might be electrocuted on aluminum ladders, set afire by spray paints, blown up by wood or varnish dust, poisoned by insecticides, incinerated in beds with fancy plastic trim, maimed by power tools and even be affected by such old fashioned injuries as hammer-mashed fingers.

Arthur A. Burroughs, Western Massachusetts District engineering manager of the American Mutual

Liability Insurance Company explained that the "do-it-yourself" habit was on the increase among women as well as men. Mr. Burroughs said that more than 600 thousand persons in the United States annually suffered disabling injuries while doing their own home repairs.

"It has been found," he said, "that the accidents followed this pattern:—115,000 people a year were injured as a result of doing their own carpentry repair work; 98,729 had accidents occurring as a result of making their own furniture; 95,000 got hurt while replacing broken window panes; 76,000 were accounted for as a result of painting the outside of houses; 57,000 had accidents while cleaning or oiling or repairing gutters and troughs.

"Forty-seven thousand were hurt putting up or taking down storm windows; 33,000 accidents occurred while trees were being pruned; 32,000 while repairing the roof; 31,000 while doing interior painting; 16,400 had accidents putting up T-V antennas, and 11,000 were hurt repairing or repainting chimneys.

More Ladder Accidents

"It is interesting to note that 300 thousand accidents fell into classifications in which a ladder would ordinarily be used to perform the 'fixing' operation. 252 thousand accidents involved use of tools. Of these, 180 thousand were accounted for by power tools and 72 thousand by carpentry hand tools. Since the females of the species have been of late performing the same operations as the males, they are exposed to the same hazards."

Mr. Burroughs said such simple precautions as checking ladders and tools before use and then using them in a common sense way could reduce drastically the biggest categories of home and hobby accidents. Little things count, he said, such as opening a step ladder fully so that the side braces latch. Also, he said, women should not wear high heels or soft-soled shoes when climbing ladders.

"I want to remind proud owners of aluminum or alloy metal ladders that this type is a conductor of elec-

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AERO® Cups — for those who prefer a flat-bottom cup; in 3, 4, 5 and 6 oz. sizes. Also with stock safety messages or your own message to order.

Here's one way to do it

Put your safety message right in her hand, several times a day, on an AJAX Cup. Because then she's relaxed, receptive, ready to read. And you know the National Safety Council says safety messages *that get read* do help reduce your accident rate.

She'll appreciate the convenience and comfort of clean, easy-to-drink-from AJAX Cups—and they reduce the risk of transmitted infections, too. Any bubbler fountain is easily converted to provide this protection. Ask your paper merchant about it.

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C-25

(For details, use Key # F-15 on card on page 75)

tricity," he continued. "It should never be used in the vicinity of electrical circuits or in places where it may come in contact with electric current.

"Of late, the market has been flooded with small cans of paints, enamels and lacquers which are applied by just pressing a little button, causing the material to blow out in mist form. Almost all these sprays are highly flammable and in some cases explosive during the spraying. And watch out for spray insecticides! Some are as flammable as spray paints; most are toxic and dangerous to health; and some are deadly to breathe. Should you survive the actual spraying, make sure that any vegetables on which it may have been used are properly cleaned before being served."

Pictures by courtesy of Shell Oil Company and Brett-Guard Division, Englewood Industries, Inc.

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(For details, use Key # F-16 on card on page 75)

Western Maintenance Show

A GREATLY EXPANDED program of technical conferences is in the making as the concurrent event for the 2nd Western Plant Maintenance and Engineering Show, Pan Pacific Auditorium, Los Angeles, July 12–13–14, it is disclosed by L. C. Morrow, General Chairman. The Ambassador Hotel will again be host to both the general and sectional sessions of the two day conference.

Morrow says that this year's conferences have been planned with the object of probing into not only the new problems which exist today but those which can be expected within the next year or so, as a result of the rapidly approaching pushbutton age. Subjects to be covered include: setting up effective maintenance programs in large and small plants, preventive maintenance, lubrication, cost control, supervisory planning and scheduling in the big plant.

Security Society

ANNOUNCEMENT HAS been made of the formation of the American Society for Industrial Security, following an organizational meeting of security directors of more than 50 U. S. companies.

The organization will function as a professional society for industrial security, according to Paul Hansen, director of security for Reynolds Metals Co., Louisville, who was elected president. He said the society would conduct forums, study and research to increase general knowledge and establish ethical and professional standards. Industrial security embraces the fields of plant security, plant protection, internal security, government industrial security and related activities.

SOURCE MATERIAL and the illustration for the article on salt tablets in the May issue through the courtesy of Morton Salt Company.

where compressive loads are 100 pounds per square inch or less. The loading of the average industrial machine usually falls within this range. The mounting is available in two major types: type GP (General Purpose) for loadings of 10 to 50 psi and type HD (Heavy Duty) for loadings over 50 psi. For loadings below 10 psi other types are available. Under optimum conditions, isolation efficiencies of 85 percent are realized.

The felt mounting material (GP) is manufactured in one-half inch thickness in both roll and sheet form but can be supplied precut to definite pad sizes. When necessary, multiple thicknesses are used. Type HD is made one-half inch, 1 inch or 2 inches thick. Both types are available plain, with a fast drying, water and oil resistant liquid adhesive, while type GP may be obtained already precoated with a pressure sensitive adhesive making it ready for immediate application. The liquid adhesive is employed where operating conditions are extreme or where the equipment has a strong tendency to "walk." For normal applications the precoated pads are excellent.

Machinery can be easily relocated by softening the adhesive with a solvent fluid. The elimination of lag bolts with the resultant saving of floors is an extremely important factor; and this, coupled with appreciably decreased installation time and ease of maintenance, makes the mounting particularly useful for companies that must move machines often.

Installation Procedure

To choose the right density or type of mounting, it is necessary to calculate the pounds per square inch load which the machine exerts on the foundation.

The correct pad area is ordinarily determined by the size of the machine feet, allowing a one-half inch border all around. If the machine has a flat base, 4 or more pads are employed. The pad size must be such that the psi load will fall within the loading range of either the general purpose or heavy duty mounting.

Concerning thickness, a one inch pad is usually employed; for many machines one-half inch is sufficient. For high impact machinery, one and one-half or 2 inches are required.

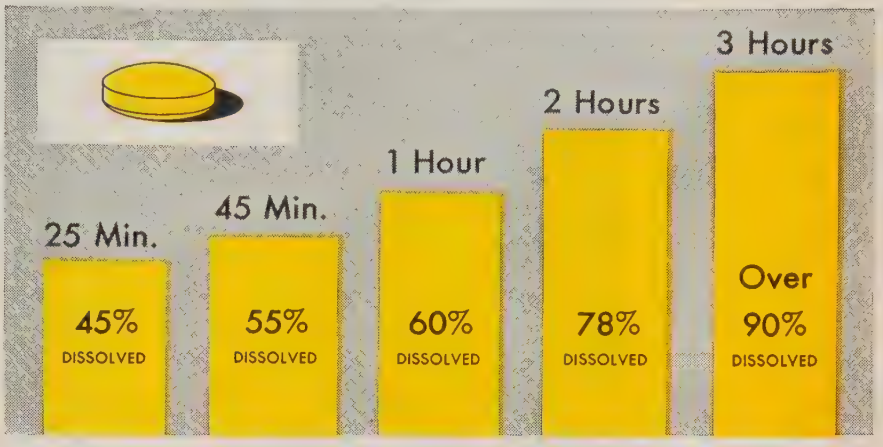
Occasionally, lag bolts are needed for severe operating conditions, such as a belt drive tending to pull a machine from its location or for a topheavy piece of equipment. Care must be taken to isolate the bolt from the machine foot by inserting type HD washers between the bolt head and foot. For critical installations a felt sleeve is also used around the bolt where it passes through the machine foot.

The application of this felt mounting is simple, and its advantages many. With its adoption, the "horizontal shaking" of managements' heads would soon become a vertical nod of approval.

Pictures by courtesy of The American Felt Co.

Controlled dissolving action is the reason Morton Impregnated Salt Tablets give fast relief—without nausea

This chart shows the controlled dissolving rate of a typical Morton Impregnated Salt Tablet



Within minutes, the average person begins to feel better, work better, when he takes Morton Impregnated Salt Tablets. For as soon as the tablets are taken, essential body salt lost through perspiration begins to be replaced—but at a gradual rate, so as not to cause nausea.

For more than three hours after Morton Impregnated Salt Tablets are taken, they continue to fight heat fatigue by supplying salt. Careful, uniform coating of the salt crystals in each tablet results in controlled dissolving action —the reason Morton Salt Tablets give such excellent results.

Morton Yellow Impregnated Salt Tablets come in a handy, disposable dispenser. Plastic and heavy-duty aluminum dispensers are also available, as are plain salt tablets.

Place your order this week with your local safety equipment distributor. If he cannot supply you, write:

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U. S. Patent No. 2,665,236
Patented 1954 (Canada) No. 501,316

(For details, use Key # F-17 on card on page 75)

B R E C K

WATER RESISTANT CREAM

Breck Water Resistant Cream, when applied to the skin, forms a protective film which is resistant to the action of water and water solutions. It spreads easily, leaving a protective film which is not slippery, sticky or "heavy" Breck Water Resistant Cream is recommended for the industrial and professional worker whose skin is frequently in contact with water and water solutions, such as liquid coolants, emulsified cutting oils, mist and spray from alkali baths and plating solutions, flux fumes, cement and lime. An application of Breck Water Resistant Cream is effective for three to four hours.

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(For details, use Key # F-18 on card on page 75)

Industrial Hygiene

Chemical Labeling

UNIFORM LABELING of dangerous chemicals and drugs to alert users of the hazards in their improper handling was advocated by Sanford J. Hill of the E. I. du Pont de Nemours and Company, Wilmington, Delaware, when he addressed a meeting of the American Conference of Governmental Industrial Hygienists at the Industrial Health Conference in Buffalo.

"The tonnage of chemicals and allied products has grown fantastically in the last thirty years," Mr. Hill stated. "A new chemical or its related compounds may be useful in fields as widely separated as drugs and rocket fuels. As chemical products multiplied and, especially in the organic groups, grew more complex, it became increasingly evident that appropriate labeling was necessary to insure safe handling and use by customers possibly unfamiliar with the properties of the new products.

"The Federal Caustic Poison Act and the various state poison and pharmacy acts chiefly relied in most cases wholly on the word 'poison' to warn the user. Since most chemicals covered by these laws are hazardous mainly by ingestion, the laws met an existing need but are hardly adequate for today's products."

Mr. Hill pointed out that the Manufacturing Chemists' Association began a labeling program in 1936. "In April 1944," he continued, "a permanent committee was appointed to handle this program, consisting of chemists, chemical engineers, physicians, toxicologists, lawyers, and salesmen. Specialists were consulted when certain unusual chemicals were up for discussion. Periodically, a manual called 'Warning Labels—A Guide for the Preparation of Warning Labels for Hazardous Chemicals' was issued—a new edition being scheduled for this year. The objectives of the association in developing the warning labels program has largely been attained. Industry has voluntarily adopted the program, although we must admit that much remains to be done in a few areas."

Basically, the association believes that "poison" warnings should be strictly limited to those substances that are actually poisonous to human beings, according to Mr. Hill. However, as adequate human data are not easily obtained, the use of laboratory animals is now considered the most reliable method of ascertaining toxicity.

For instance, a substance is defined as a poison if it causes death within 48 hours in half or more of a group of 10 or more laboratory white rats weighing 200 to 300 grams at a single dose of 50 milligrams or less per kilogram of body weight when a given chemical is administered orally; or when administered by inhalation under certain conditions; or by continuous contact with the skin for 24 hours or more.

"Of necessity," Mr. Hill warned, "the definition is arbitrary and may be revised as the science of toxicology advances. In every case, data on human experience, when available, take precedence over animal data."

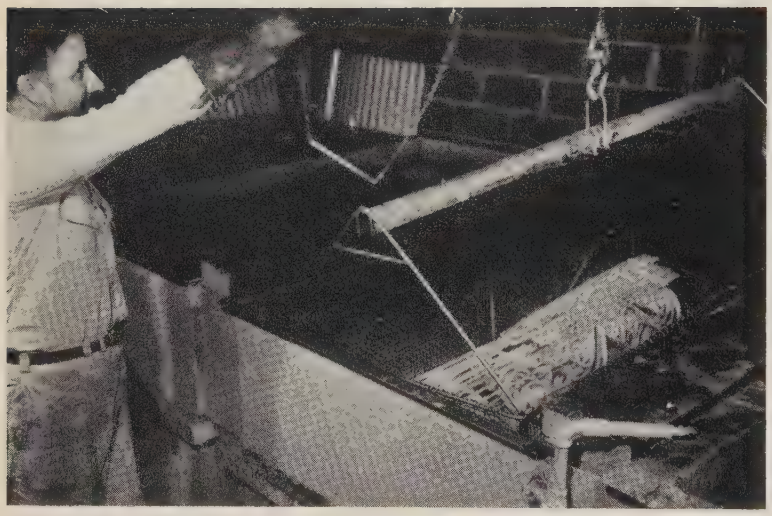
Noise Control Course

TO PRESENT THE MOST recent engineering advances in the field of noise control, the Massachusetts Institute of Technology will present a two-week Special Summer Program on "Noise Reduction" from August 15 through August 26, during the 1955 Summer Session.

"Noise as a national problem has continued to increase in importance," points out Professor Ernest H. Huntress, Director of the M.I.T. Summer Session. "Since the 1953 program on this subject at M.I.T., new advancements have been made in the field. Case histories of solutions to noise reduction problems have materially increased in number. *(Continued on p. 42)*

DUST & FUME CONTROL SERIES
more articles in July and August

HOW'S YOUR DUST and FUME ...I.Q?



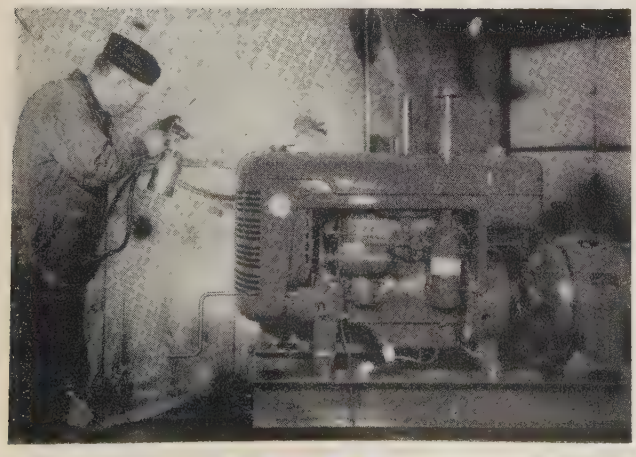
The man in the photo above is bright-dipping. But, are his prospects of being protected against the nitric acid fumes in his work, also bright?

Can you recognize an operation that's dangerous because of dust and fumes when you see one? Do you know how to transform it into a safe job? Can you tell the difference between an operation that's being done safely and one that only **seems** *safe?*

Here's how to play the game and test your I. Q:

Decide whether the answer to each of our questioning captions is Yes or No. Then turn to next page for the correct answers and an explanation of each of them. We haven't established a passing grade; but, if you get all the answers right, we're pretty sure you know dust and fume dangers!

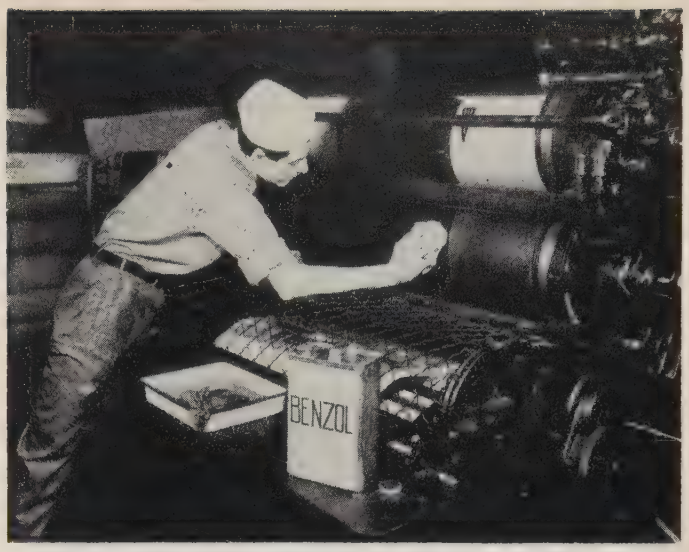
Incidentally, these pictures, in color, are appearing in an exhibit of the New York Department of Labor traveling throughout the state.



Is this man, spraying a motor housing, adequately protected against breathing paint mist and vapor?

Does the canopy hood over the worker in the picture above safeguard him from poisonous lead fumes coming from his work?

Can this pressman in the photo at right clean the roller with benzol without endangering his health?



This welder is protected by his helmet against burns and eye injury . . . but, is the hood at his right sufficient protection against harmful fumes and gases?

Is the rock driller in the picture above safe from the hazards of silicosis?

Is the grinding operation in the picture below being performed properly?

Can the fumes to which these brass foundry men are exposed be ignored as a hazard to health?

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(For details, use Key # F-19 on card on page 75)

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The Bennett cleaner *saves time and money!* It's light and highly portable. Cleans walls, shelves, beams, storage bins and other out-of-the-way surfaces with a minimum of labor!

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Adaptable to any industrial application! Picks up metal chips, glass particles, etc. Interchanging bag with hose permits removal of liquids from any normal surface or tank.

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COMPACT — POWERFUL! Highly efficient WET or DRY pick-up.

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(For details, use Key # F-20 on card on page 75)

Answers to Dus

1. YES Nitric acid bright dip operations usually release toxic quantities of brown nitrogen oxide fumes. Since in most of these operations, such as the one pictured here, the top of these tanks must be kept clear for conveyors, basket loading, etc., ventilated lateral slots (lip exhaust) are provided. Sufficient air quantities are exhausted through these slots to provide a positive flow of air down to the tank and a controlling velocity across its surface. In this way fumes are removed before they escape into the room or affect the worker.

2. YES The work is being sprayed in a properly designed, deep, spray booth. Note the air distributing baffles in the rear.

   These provide uniform air velocities in the booth and prevent "dead air" spaces in which mist and vapor can accumulate. Equally important, but less frequently understood, is the proper spraying technique used by this worker. His head is a safe distance from the work and his spray gun is pointed at an angle toward the rear. The rebound of paint spray will not be directed into the worker's breathing zone.

   If adequate spray exhaust equipment is not used, operators should wear respiratory protection.

3. NO Canopy hoods should never be used unless all operations performed by the worker are done outside the hood. These hoods convey the fumes upward and directly into the breathing zone of the worker standing at the edge of the tank. This picture shows very toxic lead fumes visibly swirling about the worker's head.

   In almost all cases, canopy hoods should not be used over tanks containing toxic materials such as lead. These hoods are subject to cross-drafts of air. Toxic fumes and vapors may be blown into the work-room and endanger everybody in the area.

4. NO Benzol should never be used for a manual cleaning operation. Benzol is one of the most toxic solvents used in industry today and inhalation of even very small amounts of benzol vapor can cause serious illness and even death. Applying benzol with a rag from a large open pan to a large surface, as in this picture, can release enough vapor to cause serious injury, even though it is done only for a few minutes, several times a day. The worker here is particularly in danger since he must bring his head close to the source of benzol vapor.

   Caution should be used in any manual cleaning with solvents. All industrial solvents are de-fatting agents and can cause dermatitis and skin irritation when in contact with bare skin. The use of protective gloves and skin creams is recommended.

ınd Fume I.Q. Quiz

5. NO Rock drilling, even in the open air with a small hand-held drill, always releases large concentrations of dust. The clouds of dust are evident in this photo. If the rock contains even small amounts of silica, or consists of minerals such as talc or asbestos, serious lung damage will strike the man working in these atmospheres for any length of time. Even rocks containing little or no silica, such as limestone, may release harmful concentrations of dust from uncontrolled drilling operations.

Rock drilling should be done wet, with water supplied to the drill, or provided with local exhaust ventilation.

6. YES This free-hanging local exhaust hood, with some means of mobility, such as a flexible pipe, is a very effective way to remove welding fumes at their source. As the photo shows, the fumes travel from the point of origin at the arc directly into the hood.

When the operator must stop welding to insert a new rod, he can shift the hood to the next welding location. For effective results, the front edge of the hood should be not more than 9 inches from the arc.

7. NO Pouring molten brass, which contains lead and zinc, may release toxic amounts of their fumes. If this operation is done for a short time, several times a day, in a large, high-ceilinged, well-ventilated room, local exhaust ventilation may not be required, provided the workers can operate without being enveloped in clouds of fume as shown in this picture.

Usually, when pouring is done regularly during the day or where the ideal conditions above do not exist, local exhaust ventilation is necessary. A ventilated central pouring station to which the flasks are transported, usually on a simple gravity roller conveyor, provides this ventilation.

8. YES The exhaust hood will remove the grinding dust before it gets into the room. This heavy hood also guards against accidental contact with or bursting of the wheel.

Note use of gloves to protect the hand and fingers, and work rest to prevent accidental snagging of the hood. Not shown in the picture, but essential, are the safety goggles worn by the operator.

Courtesy, *Industrial Bulletin*, New York State Department of Labor.

The INDUSTRIAL WORKER knows

—and he knows at close range—that an accident means serious personal tragedy to the worker as well as financial and production problems to the plant.

It's a fortunate worker who is employed by one of the progressive firms which have taken the practical step that *assures* safety against slipping accidents . . . by installing ALGRIP . . . the world's only Abrasive Rolled Steel Floor Plate. Oily, wet or greasy—level or on slope — the ALGRIP floor is foot-safe for the worker . . . safe against skidding for material-handling equipment . . . because ALGRIP's uniformly and deeply embedded abrasive keeps it safe . . . year in, year out.

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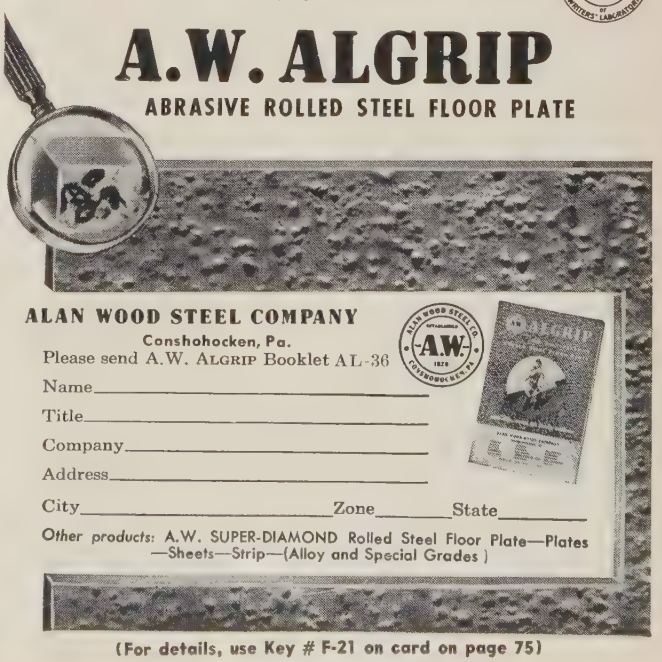

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(For details, use Key # F-21 on card on page 75)

"This year's program," continues Professor Huntress, "will differ appreciably from that given two years ago in the material selected for presentation. It will be directed toward the man with a noise problem rather than toward the noise expert."

Dr. Leo L. Beranek, Associate Professor of Communications, is in charge of the program, assisted by other members of the M.I.T. Faculty. Guest lecturers will include Robert F. Lambert, Assistant Professor of Electrical Engineering at the University of Minnesota; David C. Apps of the General Motors Proving Ground; and Ira Dyer and Clayton Allen of Bolt, Beranek and Newman, Inc., Cambridge, Massachusetts.

"An important part of the program," explains Professor Beranek, "will be teaching the use of materials for noise reduction and of apparatus for noise measurement. Selected exhibitions of products relating to the subject matter of the lectures have been arranged, and engineering personnel will be available to discuss the behavior of these materials."

Lecture topics will include: behavior of sound waves; decibels, sound pressure level, sound power level, and intensity level; sound transmission through walls and panels; quieting of engines; case histories of machine quieting, including punch-press operation and air-driven chipping hammers; design of mufflers and ventilating ducts; integrated noise control problems; and psychoacoustic criteria.

Full details and application blanks for this Special Summer Program may be obtained from the Summer Session Office, Room 7-103, Massachusetts Institute of Technology, Cambridge 39.

Compensable Hernia in N. Y.

WHAT COULD HAVE OCCURRED is often a deciding factor in compensation awards by the New York State Compensation Board in accidental and occupational hernia cases, according to a former Medical Examiner of the Board, L. A. Hulbert, M.D. He addressed the Industrial Medical Association on the subject of "Compensability of Inguinal Herniae" at the recent Industrial Health Conference in Buffalo.

Dr. Hulbert defined and classified hernia and presented in detail the postulates held by the Board to be necessary to make findings of compensable hernia, as well as the postulates held by surgical opinion to be necessary to establish a finding of casual relationship of hernia to any given occurrence.

"Compensability of hernia is held," Dr. Hulbert explained, "when claimant sustains an accident sufficient to precipitate discomfort in the inguinal region, and hernia is subsequently found; when hernia is considered an occupational disease and is presumed to be characteristic of heavy employment, and, finally, when increased symptoms of hernia constitute aggravation."

To understand the policy of the Board, Dr. Hulbert pointed out that these premises must be kept in mind: the purpose of the Workmen's Compensation statutes is to remove loss to workmen for harms sustained in the course of employment, and to provide a quick, certain, and reasonably adequate compensation for such losses. And the trend in the Board proceedings is to give the benefit of doubt to the claimant.

"This trend is desirable," Dr. Hulbert concluded, "but often leads to judgment in conflict with medical evidence and good medical practice, leading to 'what could have occurred' as the deciding factor."

Threshold Limits

NO METHOD ever has been, or ever can be devised that will permit an exact advance prediction of human hazard. Threshold Limits, no matter how accurate and well-documented, serve only as a guide and a yardstick," Miriam Sachs, M.D., of the New Jersey Department of Health, told a joint panel discussion of the American Conference of Governmental Industrial Hygienists and the American Industrial Hygiene Association at the recent Buffalo Conference.

In substantiating her statement, Dr. Sachs quoted from a preface to a list of threshold limits compiled by the American Conference of Governmental Industrial Hygienists in 1948 which stated that "people vary greatly in their response to drugs and toxic substances. Therefore, it is a figment of the imagination to think that we can set down a precise limit below which there is complete safety and immediately above which there may be a high percentage of cases of poisoning among those exposed. The values have been set at a level below which it is fair to expect reasonable protection and above which it is reasonable to expect that we can have occasional cases of poisoning."

"Official industrial hygiene agencies," Dr. Sachs explained, "must have a screening device to apply to literally thousands of industrial processes which are encountered daily. A screening device may very well be a single parameter but it should be used only for the purpose of suggesting more intensive and detailed study where the parameter is significantly exceeded."

In spite of such an elastic yardstick now in use, Dr. Sachs believes that it is nevertheless extremely useful, submitting as an example that "in radiological health and radiological safety the maximum permissible exposure value has made possible much of the rapid adoption of various radiological techniques, uses of radioisotopes, and forays into the field of nuclear energy."

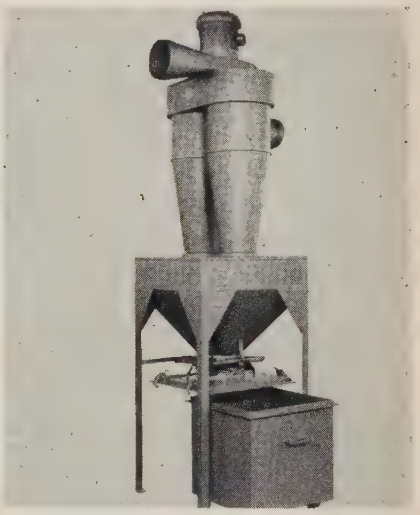
Furthermore, Dr. Sachs concluded, one of the major values of such lists of threshold limits is the fact that they are revised annually, and new substances are added as they come forth.

Fighting the Shadow Enemy

FOR THE MOST PART, when we speak of safety, the general emphasis seems to be on goggles, helmets, shoes, gloves and so on. . . . We seem to be primarily concerned about dangers to the physical exterior.

However, from time to time we need to emphasize the ***less seen*** items of safety. In past issues we have itemized what constitutes "dust" as a pollution agent in the air. We have spoken of fumes, mist, fog, smoke, aerosol and dust. All of these items are airborne . . . and all emanate from some specific source. What can we do about them?

Many can be eliminated at the source through control in processing, but most are inherent in manufacturing or processing the product, and are evils with which we must contend . . . or remove after their creation at some time before they enter the worker's lungs.



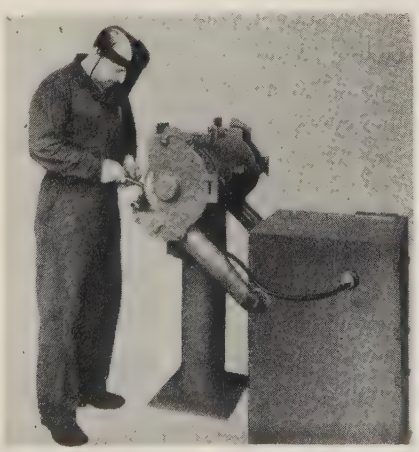
Centrifugal precipitating collector traps dust in bottom of chamber. Box removes it.

Control at Source

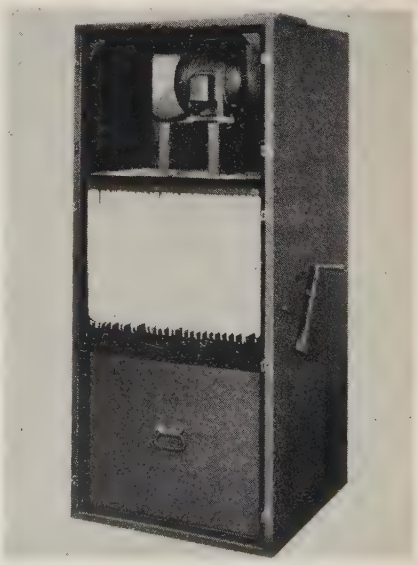
One of the finest methods for removing these agents is dust control at the source, and to do this, we can use any of many dust

(Continued on page 47)

Cabinet collector with motor and fan in view. Filters are below, exhaust on side.



Cabinet collector is shown here attached to grinder at which employee is working.



Cabinet collector opened to show filters, motor, trap-drawer. Note shaker on side.

The Industrial Nurse

The Industrial Nurse and the Cardiac

MANY TIMES it happens that the cardiac is originally discovered by an industrial medical department. Discovery can be made through a routine physical examination, through a visit by the employee to the dispensary for medical care, through referral from a work supervisor because of decreased efficiency, or through knowledge and follow-up by the nurse when the employee has been home ill without proper medical care.

Soon after a person is found to have a cardiac condition, efforts are made to place him under the medical management of his personal physician, or a qualified medical agency. The next step is to obtain a proper diagnosis so that the patient may be classified for daily care, follow-up and suitable job placement when ready to work. Functional and therapeutic classifications should be made by experts in the field of cardiology if possible.

In industry, the nurse, doctor, and management work as a team to prevent disability. Early discovery, proper referral and careful follow-up all contribute to keeping the patient in the best possible state of health in spite of his ailment. We have heard much in the past seven years regarding the employment of the physically handicapped. Actually almost all of us are physically substandard in some detail. Medical rejections in industry are more and more being narrowed to communicable disease, insanity, marked debility, or extensive physical incapacities.

Once the cardiac has been discovered and placed under good medical care, the nurse must be certain that the performance of his job is well within his cardiac reserve. Nothing is accomplished if, in response to a doctor's request for light work, an employee with diminished cardiac reserve is given a job with no weight lifting but considerable stair climbing. Some cardiac employees are in a trade or occupation that constituted their life work. If a job adjustment is considered advisable, the industrial nurse sees to it that due consideration is given the emotional needs of the worker. Efforts are made to have the employee continue in some form the use of his developed skill and experience.

Education and persuasion of the individual are equally as important as job placement. A modified living as well as working regime is necessary in order to prolong the life and useful activity of the cardiac patient. The patient must be persuaded that under careful medical supervision and with cooperation and planning the cardiac can work. It is a known fact that psychological factors often play a more important part than physical factors in causing work limitations in cardiacs. The industrial nurse in her role of health counsellor does a great deal to educate the worker and increase his ability to work either part or full time.

Last but not least, in keeping accurate up-to-date records and summaries, the industrial nurse contributes much of the statistical data necessary for research in the war against the disabling heart diseases.

To summarize, the nurse in industry assists in the control of employees cardiac diseases by:

1. Assistance in the discovery of a heart ailment.
2. Assistance in placing the patient under proper medical management.
3. Endeavoring to secure classification and a true diagnosis.
4. Assisting in suitable job placement and if necessary a program of rehabilitation.
5. Education and individual counseling.
6. Complete and continuing follow up.
7. Keeping of the individual's records and reports.

Heart Clinics Help Build New Lives

A CARDIAC CLINIC that helps heart patients get the services they need to cope with their medical, social and economic problems is a financial asset to the community, according to the American Heart Association. In a foreward to "Recommended Standards for Cardiovascular Clinics" * published recently, the Association says such clinics can help many people with cardiovascular disease continue on a productive basis, rather

* Copies of "Recommended Standards for Cardiovascular Clinics" are available to members of health departments, clinic staffs, hospital trustees and other professional personnel concerned with community health problems, from local Heart Associations or from the American Heart Association, 44 East 23rd Street, New York 10, New York.

than as physically and economically dependent individuals. The manual, subtitled "A Guide for Clinic Committee," also points out that facilities are available in properly conducted clinics to help patients' families gain the understanding of heart disease problems needed to facilitate care.

A newly-revised edition of a similar booklet issued in 1949, "Recommended Standards" provides a basis on which the Heart Association in a community, through its clinic committee, may evaluate and grant certification to local clinics. The guide was designed not only to improve existing clinics but also to help establish standards for new cardiovascular clinics. Development of cardiovascular clinics is an important part of Heart Association activity in many communities.

The guide adds that cardiac clinics also perform a useful service to the physicians of a community, offering opportunities for post graduate professional education, teaching and clinical or bedside research. Nurses, social workers and other professional personnel are likewise given an opportunity through these clinics for increasing their knowledge and improving performance.

Minimum requirements are set forth for medical, social, nursing and corollary services, such as nutritional guidance, with higher standards recommended if a community's resources permit. Certification is not a policing or licensing procedure, the booklet emphasizes, but a process intended to promote self-evaluation by the staff of a clinic. By using the yardsticks provided in the guide to explore deficiencies and find means for their correction, a clinic committee can do much to improve the level of available clinic services. It can also set goals toward which the community can work. "Certification of a clinic by the affiliated Heart Association implies that the clinic is giving the best service attainable in that community," says the guide.

Oklahoma Nursing Workshop

THE SECOND ANNUAL workshop in industrial nursing was held May 13 and 14 at the University of Oklahoma Medical Center in Oklahoma City. The theme of the workshop was "Contemporary Developments in Occupational Health." The subjects covered include: Responsibilities of the Nurse in Industry, Significant Symptoms and Signs in Everyday Clinical Problems, Problem Clinic, New Drugs of Interest to the Industrial Nurse, Diet Counselling, Psychological Aspects of Back Injuries, and Educational Programs and Counselling for Employees and their Families.

The workshop is sponsored jointly by the University of Oklahoma School of Medicine through its Office of Postgraduate Instruction, the Liberty Mutual Insurance Company, the Industrial Nurses Section of the Oklahoma State Nurses Association, and the University of Oklahoma School of Nursing.

Sewage Sterilization by Radiation

THE DEADLY RADIATION from radioactive substances, already serving mankind in industry, agriculture and medicine, may be put to other beneficial uses according to investigations conducted by the Corps of Engineers' Research and Development Laboratories, Fort Belvoir, Va., in conjunction with the Oak Ridge National Laboratory at Oak Ridge, Tennessee.

After six months of research, sanitary engineers have demonstrated that water-borne sewage can be sterilized by gamma-radiation without activating or leaving residual radiation in the treated liquids.

The waste products from atomic power plants offer one possible source of the required radioactive materials. According to Mr. Harry N. Lowe, Chief of the Engineer Laboratories' Sanitary Engineering Branch, the possibility exists that these waste products can be used to sterilize water, sewage and other liquids.

Besides the possible uses of gamma-radiation for the sterilization of sewage, other agencies have found that gamma rays can be used to sterilize certain drugs and antibiotics which are harmfully affected by heat, to preserve meat and other food stuffs by killing the bacteria that cause spoilage, to irradiate pork and thus inhibit the spread of trichinosis and to decrease bacteria in swimming pools without using chlorine.

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(For details, use Key # F-22 on card on page 75)

Safety on Film

Concrete Quality Tests

PUBLICATION and release of a new 16mm. sound color film, "Concrete Quality Control Tests," is announced by the University of California. The film shows both in construction locations and in laboratory demonstrations how carefully the batch mixes of large quantities of concrete are controlled.

The tests demonstrated include the slump, Kelly Ball, Air Volume, compressive, and impact hammer. An exciting sequence shows the pouring of tremendous quantities of ready-mix concrete with power equipment and rigs.

The 15-minute film is available for purchase at $150.00; or for rental at $5.00. Address inquiries: University of California Extension, Los Angeles 24, Calif.

Any One at All

NINETY-FIVE thousand deaths from accidental causes, 9,500,000 injuries and an economic loss of at least 9 billion 100 million dollars are the astounding annual statistics synopsized in a new Encyclopaedia Britannica Film, "Any One at All."

The twenty minute color motion picture, written by Wallace Purcell and John Barnes, and produced in cooperation with the National Safety Council, deals with the tragic statistics of one year's accident toll. The 16 mm film recreates many of the typical causes and effects of accidents in various communities. The farmer, the industrialist, the housewife, and the automobile driver, are all spotlighted dramatically in case-histories of accidents which could have been avoided by ordinary safety measures. The film highlights the apathy of the general public to accidents, and the resulting loss of life.

The film is available in color, for preview screening, and rental at the following Encyclopaedia Britannica Film libraries: Wilmette, Ill.; Portland, Ore.; Cleveland; Atlanta; New York; Boston; Minneapolis; Dallas; Hollywood; and Birmingham, Mich.

Oxygen Therapy Film

THE TITLE OF a new educational color sound slide film is "The Purpose and Techniques of Oxygen Therapy," produced by the Ohio Chemical & Surgical Equipment Co. (A Division of Air Reduction Co., Inc.).

Directed primarily to nurses and inhalation therapists, the audio-visual production is the first of a series on inhalation therapy filmstrips planned by Ohio as a basic training aid, supplementing the lectures and other instructional work conducted by the hospital staff. Showings of the filmstrip may be arranged through Ohio Chemical's regional offices at Atlanta, Chicago, New York, or San Francisco.

Personal Protection

A NEW INDUSTRIAL safety movie promoting the use of personal protective equipment by American workers has recently been released. Entitled "One to a Customer," the 11-minute film likens the wearing of personal protective equipment by workers to the nation's athletes who guard themselves against injury on the playing fields with similar safety equipment.

The movie illustrates scores of different types of industrial safety equipment, for both men and women workers, and shows the specific hazards each was designed to meet.

"One to a Customer" is one of a series of industrial safety films produced by the motion picture bureau of the Aetna Casualty and Surety Company. The movie will be available for showings on a free loan basis from the company's public education department at Hartford, Conn., or through the company's local representatives.

Safety Film Award

A NON-THEATRICAL FILM made by the informational films division of the Eastman Kodak Company has won an award from the Film Council of America. A 16mm Kodachrome film, "Safety Pays," won a certificate of merit in the safety class for its unusual approach to the problem of industrial safety. The film was made at the Kodak Park Works, Rochester, New York.

Written and directed by Fred E. Jackson, of Kodak's informational films division, it is based on the safety motive that one must work safely to be in a position to realize personal material goals in life. In addition to showing examples of how persons can avoid accidents, it also shows how safety engineers, foremen and supervisors, and training classes contribute to a well-rounded safety program. The film runs 23 minutes.

control units . . . or dust collectors.

These collectors are generally hooked up to the dust creating machine or process by a duct with a hood at the local site. By using various hood velocities, determined by the process in question, complete control can be instituted. The dust is captured before it has a chance to float away into the air.

The type of dust collector chosen must be determined by the immediate problem . . . and collector manufacturers have sales engineers who can help recommend or design the unit best suited for the particular installation. There are many types to choose from: Centralized systems where ductwork is connected to all machines or dust sources and drawn by a central unit. Other types are connected individually to each machine The great advantage here is that the collector runs only when the machine is on.

Generally speaking, of the unitized types, there are two basic designs: the cabinet cloth filter type, and the cyclone type. Specific operating information may be obtained from the manufacturers' representatives or direct from the manufacturer.

How 2 Types Work

The cloth filter type draws the air from hoods surrounding the dust source down through a compartment behind the motor in the cabinet and up through a set of filters. Heavy particles fall into a tray beneath the filters . . . the finer dust is drawn to the filters and adheres to the outside of them. The filtered air then passes through the motor chamber and out an exhaust vent on the top or side of cabinet.

In the cyclone separator type, most of the dust is precipitated to the reservoir at the bottom of the cyclone by centrifugal force. Only very fine dust particles pass through to the after filter and the clean air is recirculated indoors; or where conditions require, through to outside exhausts. Here, the after filter is generally eliminated and the fine particles exhausted directly into the outside air.

Many of the dusts in today's manufacturing or processing are a great menace to health, and even when the dust is not a particular health menace, it is known that worker efficiency is greatly improved when the air is free and clear. Another safety factor, of course, is minimizing the fire hazards present with volumes of dust. And a further distinct advantage to having dust control is the protection of machines. Abrasive dusts shorten considerably the life of machinery.

With the modern equipment available, today's plant management is wise to seriously consider instituting dust control. The advantages of clearing dust pollution from the air are many, and the costs of controlling this menace are not too great.

Pictures by courtesy of Torit Mfg. Co.

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(For details, use Key # F-24 on card on page 75)

The Fire Front

Hydrogen Fire Hazards

HYDROGEN is a flammable gas that is colorless, odorless, tasteless, and the lightest substance known. It burns with nearly colorless but intensely hot flame. Burning in air the flame temperature may run as high as 3600 F. The oxy-hydrogen flame is hotter. The product of combustion is water vapor.

According to a recent bulletin of the National Board of Fire Underwriters, hydrogen, in addition to being highly flammable, has a wide explosive range. When released in air it rises rapidly and may collect at the ceiling, but it diffuses more rapidly than any other gas (about 7 times as fast as gasoline vapor) so that explosive mixtures are formed very quickly. It may be ignited by contact with certain catalytic substances at temperatures considerably below 1085 F. Sponge platinum, a conspicuous example, causes ignition at room temperature.

Hazard in Storage Battery Rooms

Hydrogen gas is liberated from the negative elements of lead storage batteries while they are being charged. The amount of hydrogen varies with the charging rate, and increases rapidly as the batteries approach full charge, reaching a maximum of 0.01474 cu. ft. of hydrogen per ampere-hour of charge when the cells are fully charged. The rate of hydrogen liberation can be effectively cut down by reducing the charging rate as the cells approach full charge.

The U. S. Bureau of Mines cooperated in an investigation of hydrogen concentration in a number of large storage battery rooms and found that the hydrogen diffused rapidly in the air above the batteries. In general, the hydrogen became well mixed with air within 3 or 4 ft. of the point where it was liberated. Points of maximum concentration were always above the level of the batteries but not otherwise fixed. They varied with the conditions affecting air movements in the individual rooms. In 2 of 23 battery rooms tested, flammable concentrations of hydrogen were found, indicating the need for increased ventilation.

Many small fires and minor explosions have occurred from ignition of hydrogen in storage battery rooms and in some cases burning of the hydrogen has propagated into the cells, and batteries have been blown apart scattering the acid.

Adequate Ventilation

Adequate ventilation of storage battery rooms is important for safe operation. The ventilation must take account of the fact that hydrogen rises toward the ceiling and diffuses rapidly as it rises. Ventilation requirements depend on the number and size of batteries under charge. Air inlet openings at or below the level of the batteries are essential regardless of the kind of exhaust. For a small number of batteries a vented hood over the batteries may be satisfactory. A vent stack to aid in producing upward draft is desirable where natural ventilation is used.

Hydrogen Cooled Electric Generators

Hydrogen is used for cooling electric generators and related equipment. Windage loss with hydrogen is approximately one-tenth of the loss with air cooling. Generators with 20 per cent higher rating are possible with hydrogen cooling. Reduction of insulation oxidation, fire hazard, windage loss and noise are claimed as advantages. Special controls are required. The housing must be explosion-proof, and the shaft seal must be gas-tight and is usually of the oil-film type.

Also needed are a method to exhaust and admit hydrogen without

March Losses Higher

ESTIMATED FIRE losses in the United States during March amounted to $88,197,000, the National Board of Fire Underwriters has reported. This figure represents an increase of 4 percent from losses of $84,821,000 reported for March, 1954, and an increase of 3.7 percent from losses of $85,046,000 for last February (1955).

Losses for the first quarter of 1955 now total $248,508,000 a decrease of .07 percent over the first three months of 1954, when they amounted to $250,242,000.

These estimated insured losses include an allowance for uninsured and unreported losses.

IMMEDIATELY EXTINGUISHED!

It's not the cigarette or cigar that's being smoked that causes fires — it's after they're discarded and forgotten that they become a serious fire hazard! SIPCO DUNKING STATIONS end this fire hazard by immediately drowning every last dangerous spark.

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(For details, use Key # F-25 on card on page 75)

creating explosive mixtures, a method to control purity of hydrogen, and a means of vacuum treating the oil to purify it.

Safety Devices

Safeguards include temperature indicating controls and suitable alarms on the operating and storage systems. Electrical equipment should conform to the requirements of the National Electrical Code (Article 500, Class I Division 2, and in some cases Division 1).

Considerable hazard may be encountered during the charging of a newly installed unit. "Scavenging" out the air contained in the generator housing with carbon dioxide is necessary before admitting hydrogen, to prevent the formation of an air-hydrogen mixture that is within the explosive range. The reverse procedure must be followed when getting ready to dismantle the generator for repair or inspection. The instruments and alarms provided on the central panel warn against any dangerous condition during such operations.

Winning Cities in Fire Waste Contest

WINNERS of the 1954 Inter-Chamber National Fire Waste Contest have been announced by the National Fire Waste Council which is sponsored by the Chamber of Commerce of the United States. Winners of the 1954 Contest were selected from 425 entered cities and 157 contestants in the final judging.

Providence, Rhode Island, was winner of the Grand Award. Honor certificates were won by the following cities: Class I (Population over 500,000)—Cincinnati, Ohio; Class II (250,000 to 500,000)—Dayton, Ohio; Class III (100,000 to 250,000)—Allentown, Pa.; Class IV (50,000 to 100,000)—Schenectady, N. Y.; Class V (20,000 to 50,000)—Walla Walla, Wash.; Class VI (under 20,000)—Port Angeles, Wash.

How to Guard Your Plant Against Fire During Vacation

THE PRACTICE of a vacation period for the entire company and a complete plant shutdown during this period is spreading rapidly. Each year more and more organizations are adopting this custom.

There are many advantages to the plan and it has worked out much more satisfactorily in many cases than individual staggered vacations. Customers and sales divisions are notified well in advance of plant closing so that orders may be placed prior to this period. Experience has shown that a complete plant shutdown has had no adverse effect upon sales.

For Plant Alterations

Many companies use this shutdown period for plant alterations and maintenance work which cannot be done at other times without interfering with production, as well as for work which requires welding. Others take advantage of this time to do a more thorough job of housecleaning and renovating than is possible during work periods.

Whether the plant is completely idle or special work is being performed, it is important that selected standby personnel be appointed to be on the premises during this period. They may form a very small crew, but they should make periodic inspection of all buildings and all departments, and be thoroughly informed and trained in what to do in an emergency.

Standby Crew Instructions

Standby crews should know where to reach key management officers in case of need, and they should be instructed to persist in their effort to locate these men regardless of delays or difficulties. They should, of course, be trained in the use of fire fighting equipment, know exactly where this equipment is located in each building or department, and be alert to any special potential dangers which may exist. In addition, the local fire department, police department, and fire control services should be notified of the shutdown period and of any alteration work which may be going on. They, too, should have the names of officials to contact if necessary.

Leave a Clean Plant

It is advisable to do a thorough housecleaning during the last week of production and have machinery and premises in good condition by

Check List for Plant Shutdown

1. Remove all waste material from machines, benches, tables, and oily work clothing from lockers.
2. Clean flammable residues from ovens, spray booths, hoods and ducts.
3. Remove solvents, cements and all flammable liquids to safety vaults.
4. Disconnect unused gas and electrical equipment, close main valves and open main switches where possible.
5. Check fire extinguishers, fire pumps, hose, and fire fighting equipment.
6. Check water pressure for sprinkler system.
7. Check piled stock for obstruction to overhead sprinklers.
8. Clean plant thoroughly of all debris; keep aisles clear and open.
9. Appoint standby crews or watch service for the shutdown period.
10. Notify Fire, Police, and fire control services of vacation period.

the last day of work. All combustible waste should be removed from all departments, especially around machines and under tables and benches, and the necessary time taken to clean machines and work areas. Gather and remove from the premises all oily rags, papers, aprons, gloves, and other similar items which might cause spontaneous combustion and see that there is a thorough cleaning of employees lockers. Insurance companies report that fires are frequent in the lockers of the plants they cover and that these fires are usually due to spontaneous combustion in oily clothing and rags. All work garments and other oily, greasy clothes or waste should be removed from these lockers and, if possible, the doors should be left open.

Remove All Flammable Residues

The plant engineer should be given the responsibility of closing down ovens and processing equipment. All flammable residues should be removed from ovens, spray booths, hoods and ducts. Spray booths should be scraped clean with non-ferrous tools. Almost half the fires involving spray painting are caused by the spontaneous ignition of the residue in ducts and booths. There should, of course, be a perpetual system of cleaning at regular intervals during production periods to control this fire source, but it is especially important prior to shutdown.

Flammable liquids also require special attention. Many plants make an absolute rule that all solvents and cements must be removed from production areas daily whether stored in safety cans or not. During regular working time many of these cans are placed in safety storage cabinets within the departments, but during shutdown it is better practice to remove them from the area entirely and place them in special flammable cement storage vaults. All cans and drums should be tested for tight closure before storage.

General, over-all plant shut-down provisions include shutting off gas outlets and other similar potential fire hazards, and disconnecting all electrical equipment not required for use. Have main switches pulled wherever possible, but be absolutely certain that fire pumps are not left without power to operate in emergency. All fire extinguishers of all types should be thoroughly checked, alarm systems should be tested and all fire fighting equipment inspected with special attention to fire hose.

Full Water Pressure

Make certain that full water pressure is maintained at all times for sprinkler systems—your most valuable safeguard against excessive loss and destruction—and make a thorough check of all departments to be absolutely sure that sprinklers are unobstructed by high-piled stock. In no case should material be stacked higher than 12 inches below overhead sprinkler pipes. This is the absolute minimum required for effective fire prevention. Make certain, also, that all aisles are clear and free from obstruction so that any part of the plant that requires attention may be reached quickly and without delay.

By courtesy of the Protectoseal Company.

Aircraft Extinguishers

CARBON DIOXIDE and water are the preferred agents for hand fire extinguishers to be used in aircraft, while chemical agents producing toxic or irritant vapors considered hazardous to crews and passengers are not recommended.

Underwriters' Laboratories toxicity ratings are used to distinguish acceptable and unacceptable extinguishants. These are among the features of NFPA Standard 408, Aircraft Hand Fire Extinguishers, up for final approval by the National Fire Protection Association at its 59th Annual Meeting, May 16–20 in Cincinnati, Ohio.

The recommendations of Standard 408 were discussed by the various interests concerned and will not become official until and unless approved by the general NFPA membership at the Annual Meeting.

The standard will also specify the number and location of carbon dioxide and water extinguishers for aircraft of various types.

The text of NFPA tentative Standard 408 is contained in NFPA Aviation Bulletin No. 120-C, which may be obtained from the NFPA (60 Batterymarch Street, Boston) for 25¢ each.

Fire-Resistant Hydraulic Fluid

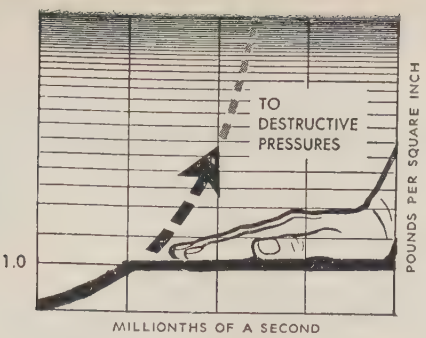
A NEW INDUSTRIAL safety motion picture, "Before Hydraulic Fires Start," featuring Monsanto Chemical Company's fire-resistant hydraulic fluid, has been released for public showing.

Stressing the importance and versatility of hydraulic power as an industrial tool, the movie points out that fire-resistant fluids make possible the increased use of hydraulic power where the danger of fire exists.

In laboratory demonstrations and plant sequences, the fire-resistant hydraulic fluid is shown to have excellent viscosity, lubricity and stability and to be effective in a variety of industrial applications, ranging from die-casting machines to billet handling equipment.

A phosphate ester based fluid, it does not mix with water, is unusually stable, and can be easily and economically recovered and reclaimed, according to a step-by-step presentation in the movie.

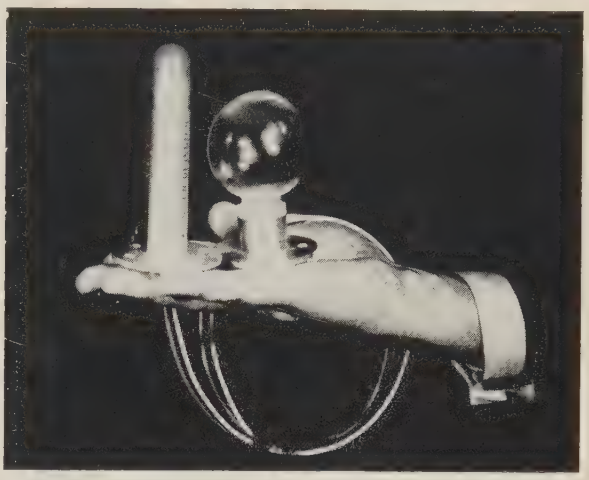
Prints of the 16-mm., black-and-white, sound movie, which runs about 12 minutes, are available on request to the Public Relations Dept., Monsanto Chemical Co., St. Louis 4, Mo. It was produced by MPO Productions, Inc., of New York City.



Dotted line at left shows pressure rise during an uncontrolled explosion. This destructive force takes an entirely different course, as shown by the heavy line, when checked by the counter-explosion of the new extinguishing device.

by **E. DOUGLAS REDDAN**
Vice President Fireye Division
Electronics Corp. of America

Explosions Nipped By Exploded Extinguishant



Held in man's hand above, the complete explosion extinguisher unit is only three-quarters of a pound. The detector is at left, and the plastic ball, at right, contains both detonator and extinguishant.

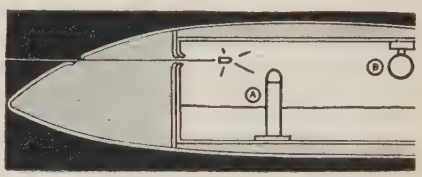
FOR THE FIRST TIME explosions are stripped of their destructive force by a new electronically controlled explosion suppressor perfected for the Armed Forces and now released for commercial production.

The device was designed specifically to prevent explosion and fire on a combat plane after an incendiary bullet makes a direct hit on a fuel tank. The system was developed by the Electronics Corporation of America in cooperation with the Republic Aircraft Corporation and with the support of the United States Air Force. Used in conjunction with a fire suppressing system, it has proven so effective that plans for its installation in military aircraft are under way.

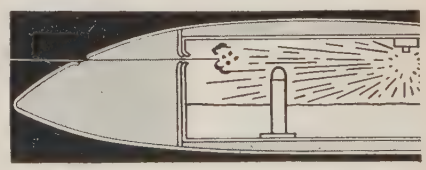
Quite apart from its military significance, the new device has important implications for industry. As an explosion suppressor or extinguisher, it opens up the entirely new field of "explosion prevention." At the same time, because the response of the system is in no way dependent on flame contact, pressure rise or temperature rise, but is instantaneous, its perfection marks the successful introduction of the new speed-of-light principle not only for suppression of explosions, but applicable also for detection and extinguishing of fires.

The heart of the explosion suppressor is a miniature lightweight infrared-sensitive photoconductive cell. Coupled with the cell is a small plastic container of fire extinguisher fluid. The container also holds a small detonation charge like the blasting cap used for dynamite explosions. All of these elements have a combined weight of about 3-quarters of a pound and are so small that they can easily be held in the palm of your hand (*see illustration*). A complete, self-contained system consists of one detector and one or more containers. On military aircraft, a system is installed in each fuel tank with the number of containers varying according to the size of the tank. It takes, for example, 2 cc of extinguishing fluid to protect each gallon of space.

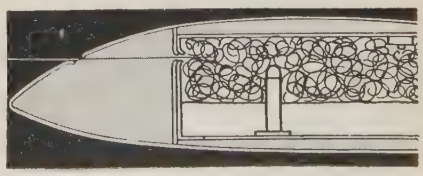
The system works this way. When the explosion detector sees infrared radiation—and such radiation is present in large quantities in all fires and explosions—it changes its resistance with extraordinary rapidity. On a combat plane, the detector is



When bullet enters plane's wing tank at left the first spark is seen by infrared-sensitive photoconductive cell inside the detector (A) which operates equally well, either underneath or above fuel.



As bullet explodes, detector sets off counter-explosion in bulb (B) containing extinguishant by triggering detonator. All this happens in fraction of second.



Air space is filled with extinguishant exploded from bulb and original explosion is stripped of its destructive force in millionths of a second. Extinguishing system then protects fuel tank cavities in similar way.

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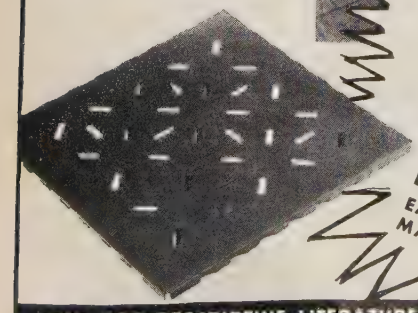

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designed to react before the incendiary bullet, travelling at 3000 feet per second, is half way through the wing. The reaction or change in resistance of the detector electronically triggers or sets off the detonator. The latter, in turn, spreads the extinguishing agent throughout the fuel tank of the plane at the rate of about 300 feet per second.

Extensive tests demonstrated that this sequence of events takes place with such speed as to very adequately suppress explosions in the fuel cells. These tests were not limited to laboratory conditions, but were carried out under simulated battle conditions.

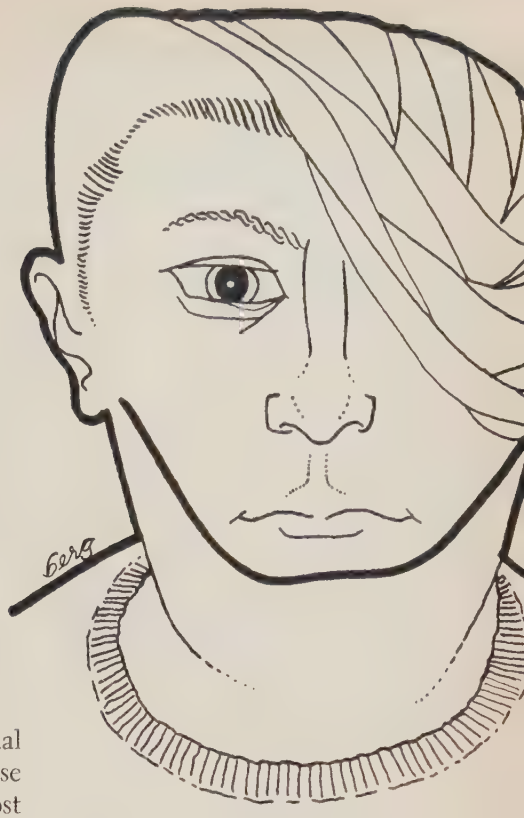
The system is not limited to a single reaction. It is possible to design installations to protect against more than one hit in the same area. Actually, the system resets itself instantaneously. As a result, 2, 3 or even more operations can be accomplished through the use of relays and additional capsules. However, a hole in a wing tank probably would afford sufficient ventilation so that any remaining vapor mixture would be too lean to explode. Or if the hole did not permit ventilation, the extinguishing fluid would maintain an inert atmosphere for perhaps as long as 20 minutes.

The effect of the extinguishing fluid on the fuel is negligible. Most of the fluid goes into vapor and out the vent. Where it does not, there is not enough to harm the fuel. The capsules are so designed too, that when they break, the pieces are large enough not to clog the fuel lines, but are filtered out. The explosion detector works submerged under fuel as well as above the fuel.

For the time being, the biggest markets for the explosion suppressor are the Air Force and the Navy for whom the revolutionary device was perfected. However, now that it is released for commercial production, it will be marketed on a broad scale. Applications already are being made by engineers in ground fuel storage tanks, pumping stations and similar areas where explosions are ever-present hazards.

Pictures by courtesy of Fire-Eye Division of of Electronics Corporation of America.

Learning..... the hard way



JUST LIKE A HYDROGEN BOMB . . .

WE HAVE BEEN HEARING much lately about the dangers of radioactivity and "fallout" from nuclear explosions. On a much smaller scale, but not less deadly, is the hazard of radium used in industry. The seriousness of recent personal injuries and the size of property damage claims from accidents with radium-filled capsules used in commercial and laboratory work has produced a special hazard bulletin on the subject.

The bulletin outlines the following steps which should be taken to safeguard against further mishaps with the powdered radium most commonly used in medicine and industry.

1. Personnel assigned to handle the tiny capsules should be kept advised of the dangers involved and the necessity for great care in their use.
2. The use and storage of containers should be under effective supervision so that the location of all containers is known at all times. It is preferable that capsules be kept under lock and key when not in use and that a constant inventory be maintained.
3. Equipment used to handle the capsules, especially mechanical equipment, should be designed so that the containers are not subjected to shocks and jarring.
4. Measuring equipment should be available for detecting unusual radiation conditions such as those resulting when a container is lost or broken. Meters designed to respond only to beta and gamma radiation are unsatisfactory and may give false readings of the amount of radiation present. Alpha meters, while more difficult to calibrate, give a truer picture.
5. Containers of all types, i.e., glass or very thin metal such as platinum or aluminum, should be checked regularly to eliminate the possibility of undetected leakage.
6. Personnel should know whom to contact in the event of loss or breakage of a container.

The bulletin lists also five basic rules to be followed if a radium emergency should arise:

1. Do not attempt to clean up the spill.
2. Close all windows, stop ventilating equipment and leave the room immediately.
3. Remain in close vicinity of the exit until a radioactivity check can be made of shoes, hands, clothing and equipment. The check will prevent spreading of the contamination.
4. Lock all doors and seal all cracks, from the outside of the room, if powdered or gaseous sources of radiation are involved.
5. Contact a consultant experienced in radiation hazards. Decontamination of persons, buildings and equipment should be conducted only under qualified supervision.

While radium is being replaced for many uses by radioactive cobalt and other new radioisotopes, the bulletin points out that the safety rules listed apply to those materials also.

Principal cause of concern among radium users, according to the bulletin, is that a capsule will be lost or stolen. Since the material is so valuable and the container so small —often less than an inch in length and a sixteenth of an inch in diameter—it offers great temptation to thieves. The usual result of such theft is severe injury to the thief, frequently after only very brief exposure.

In cases of loss or misplacement, the bulletin says, the capsule is most frequently found either in the same room where the loss occurred or in a trash pile, incinerator or sewer. The radium is most apt to be found if a search is started immediately after the loss is discovered and is directed by an experienced radiation man.

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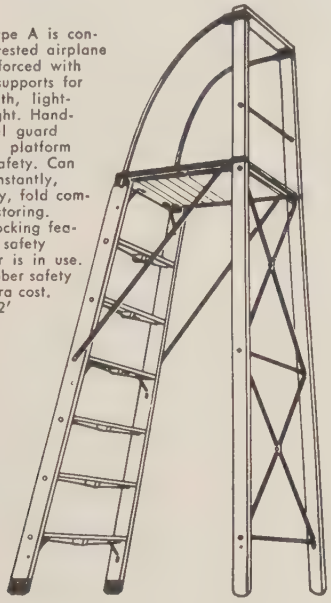

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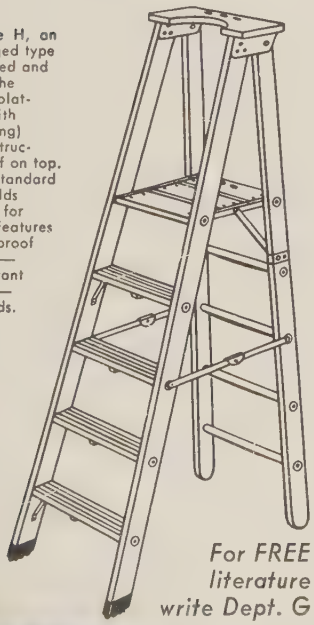

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SAFETY ACHIEVEMENTS

THE CHEMICAL INDUSTRY SET A new all-time safety record in 1954, it has been announced by the Manufacturing Chemists' Association. Lost-time accidents in the industry, as recorded by the MCA General Safety Committee, amounted to 3.27 per million man-hours worked, the lowest figure in the history of the industry and an 11 percent improvement over 1953. Accident severity rate declined to 0.49 per thousand man-hours worked, a reduction of 40 percent over 1953. The chemical industry has reduced its accident frequency rate 57 percent since 1946. The MCA safety performance report covers plants in North America representing over 757 million employee hours of exposure.

Simultaneously, the association announced that to date it had awarded 317 certificates of safety achievement for 1954 to plants representing 30 companies. The awards are made annually to those plant locations which complete a calendar year without a lost-time accident.

• • •

FIVE FOREIGN PLANTS OF THE Goodyear Tire & Rubber Company have been commended for outstanding safety records during 1954 by the National Safety Council, it was announced by J. T. Kidney, the firm's director of safety.

Receiving the Council's Award of Merit are Goodyear-Sweden and Goodyear-Java. The Swedish plant reduced its injury frequency rate 89 percent over its par rate, while improving 100 percent its injury severity rate over 1953. Goodyear-Java topped the injury frequency par rate by 48 percent and improved by 72 percent its injury severity rate.

The Council's Award of Honor goes to Goodyear-Brasil-Textile for 5,917,248 man-hours without a disabling injury, and to Goodyear-Cuba for improving its injury frequency rate 97 percent over its par rate and its injury severity rate 95 percent.

A certificate of Commendation will be awarded to Goodyear-Wallasey of England for its record of 624,732 man-hours without a disabling injury from January 1, 1954 to December 31, 1954.

• • •

FOR A SAFETY RECORD MORE THAN twice as good as the national average for its type of industry, the A-P Controls Corporation recently won special recognition from its compensation insurance carrier.

The company's accident frequency rate is 2.1, compared with a national average of 4.48 for similar industries. During one point last year, the company accumulated 981,000 consecutive man hours with a perfect safety record.

• • •

A FIRST PLACE AWARD FOR WORKing 600,603 man-hours without a lost-time accident during a period of one year has been presented to the research and development department, United States Rubber Co., by the National Safety Council. It was the eighth award of its kind to be won by the rubber company's general laboratories since 1932. Man-hours worked without a lost-

time accident during the eight years the awards were won, total 3,078,505. General laboratories also placed third in U. S. Rubber's inter-plant safety contest recently and received an award from H. E. Humphreys Jr., president.

• • •

A RECORD OF MORE THAN 14 YEARS without an accident was celebrated at a recent testimonial dinner for 16 tool room department employees of the Mosler Safe Company, Hamilton, Ohio. The department has not had a lost time accident in more than 5,100 days, according to Edwin H. Mosler, Jr., president.

• • •

THE COVETED PENNSYLVANIA MANufacturers' Association Safety Award plaque, given only to manufacturers in Pennsylvania in recognition of a million continuous man-hours of production without a lost-time accident, was presented to the Kittanning plant of the Linde Air Products Company.

G. Mason Owlett, the Association president, presented a plaque at a dinner honoring Linde employees. Val Osinski, assistant plant superintendent, accepted the award for the employees who achieved their million-man-hour safety record over the 2½ year period from October, 1952, to April, 1955.

• • •

KYRENE STEAM POWER PLANT EMployees were named the top winners in the annual Safety Awards competition conducted by the Salt River Power District among four large employee categories. The Kyrene group compiled 67,692 accident-free hours. The group also won plaques for lowest frequency; for no lost time accidents, having completed the entire year of 1954 without a lost time accident.

• • •

ST. REGIS PAPER COMPANY'S SAFETY program resulted in 1954 in a significant reduction in the company's accident frequency rate from 20.51 in 1953 to 13.43 in 1954. The "Award of Honor," from the National Safety Council, was won by the St. Regis multiwall bag plant at Pensacola, Fla. Personnel at the multiwall bag plant worked two-thirds of a million man-hours without a disabling injury. The Vancouver, B. C. multiwall bag plant won the Council's "Certificate of Commendation" and six additional safety awards from other groups. June, 1954, marked the completion of three years without a lost-time accident.

"Certificates of Achievement" from the Council were awarded to St. Regis mills and plants at Bucksport, Maine, East Pepperell, Mass., and Franklin, Va.

Winners of the company's divisional awards for 1954 are as follows: Kraft Pulp and Paper Division—Kraft Center, Pensacola, Fla.; Printing, Publication & Converting Paper Division—Kalamazoo, Mich. paper mill; Multiwall Packaging Division—Vancouver, B. C. multiwall bag plant; Panelyte Division—Kalamazoo, Mich. plant and Woodlands Division — Bucksport, Maine.

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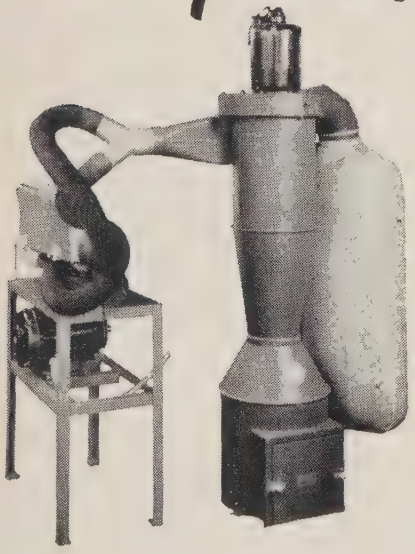

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"What's the Law?"

Edited by
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Counsellor at Law, Newark, N. J.

Master Superior Court, New Jersey
Member
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
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• • •

SILICOSIS—Assumption of Risk

THE MASSACHUSETTS COURT has held that where an employee contracted silicosis, which might have been avoided by the proper use of fans and masks not furnished by the uninsured employer, a contention that the employee knew of the dust and presumably assumed a risk was immaterial since the employer was negligent in not providing a safe place to work.

REIDY vs. CROMPTON AND KNOWLES LOOM WORKS (1945) 60 N. E. 2d 589.

SILICOSIS—Injurious Exposure—Statute of Limitation

The Maryland Court, in a case also involving silicosis, states that the inhalation of sand dust during a second mining employment of more than 4 years, even though only for a short time each day, constitutes an injurious exposure to silicosis for lungs that have been "loaded" by exposure for 28 years in another mining job so that every additional exposure aggravated the latent disease. Since the claimant did not become disabled, or discover that he had silicosis, until the first employer was protected by the 3-year limitation statute, the claim against that employer was dismissed and the second employer alone was liable.

JOHNSTOWN COAL & COKE CO. vs. DISHONG (1951) 84 A. 2d 847.

TUBERCULOSIS—Aggravation—Notice of Injury

The Massachusetts Court held last year that an employee who developed tuberculosis was properly awarded compensation. The evidence disclosed that in the course of his employment he was exposed to dust and paint fumes in sufficient quantities to contract tuberculosis.

KULIG'S CASE, (1954) 120 N. E. 2d 757.

The cases above illustrate the fact that an employer can materially reduce industrial accident awards by the proper use of appliances that will prevent employees from contracting certain diseases connected with their employment. Although some employees have a reluctance to use safety appliances designed for their own protection, employers should insist upon their strict use. Not only does this protect the employee, but reduces industrial payments to careless employees.

Packaging and Handling Show

PLANS HAVE BEEN completed for bringing the 10th Annual National Meeting of the Society of Industrial Packaging and Materials Handling Engineers into the New York area for the first time, September 19–22. Scheduled for the Kingsbridge Armory, the triple-feature meeting will include a packaging and handling short course, the competition in packaging and materials handling techniques, and a general exposition of products and equipment. Further information about the events can be obtained from the headquarters of the Society at 111 W. Jackson Blvd., Chicago, Ill.

Mechanical Engineering and Power Exposition

ANNOUNCEMENT HAS been made that the Chicago Exposition of Power and Mechanical Engineering will be held in the Chicago Coliseum, November 14 to 18, under the auspices of the American Society of Mechanical Engineers and in conjunction with their 75th anniversary meeting. Space reservations are already being made for the display, which will be located only a short distance from the hotels where the A.S.M.E. meetings will be held. The exposition will be under the management of the International Exposition Co., 480 Lexington Avenue, New York 17, N. Y., which also conducts the National Exposition of Power and Mechanical Engineering, which has been held in New York for many years. E. K. Stevens is the exposition manager.

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Wire and Cable Developments

NEW DEVELOPMENTS in the wire and cable industry were discussed at the spring meeting of the National Electrical Manufacturers Association's Wire and Cable Section before seventy-five of the industry's executives.

New designs of magnet wire test equipment were demonstrated by representatives from Indiana Technical College, Fort Wayne, Indiana. These included a scrape abrasion tester, a copper softness tester, mercury bath insulation, and a dielectric breakdown tester. This organization is doing research and development work for industry and is producing a line of test equipment for use by manufacturers and users of magnet wire.

More Efficient Packaging

Magnet wire manufacturers were interested in another discussion concerning new and more efficient methods of packaging magnet wire. In place of the conventional wire spools, a variety of steel pails and drums and fiber containers are being utilized. Advantages are that the containers need not be returned, that they offer excellent mechanical and weatherproof protection for the wire, and are more desirable for shipping purposes.

A new type of thermoplastic building wire is receiving wide consideration in the industry. H. H. Weber, representing NEMA on Panel No. 6, National Fire Protection Association, reported the latest developments on this THW moisture and heat-resistant building wire, which is now being considered for recognition in the National Electrical Code. If accepted, this wire would be suitable for use in wet locations designed for operating temperatures as high as 75C.

Safe Driving Book

THE LATEST book in the driver education field, *"The Road to Better Driving,"* published by the Cambridge Book Co., 6 Varick St., New York City, emphasizes the need for safe habits and attitudes to cut down the automotive death rate. The book covers safe driving and collateral topics such as mechanics, psychophysical testing, law, practical driving situations, career opportunities, and safe attitudes and habits. The publishers call this a Work-A-Text because it includes thousands of objective questions, plus worksheets. The various state editions contain 32 page summaries of the Motor Vehicle laws of the particular state in which the book is sold. More state editions are in preparation. In paper it is priced at 95 cents; in cloth it is $1.95.

Guide to Community Safety Programs

THIS GUIDE is a reprint of the "Report of the Committee on Community Safety Programs" submitted to the 1954 President's Conference on Occupational Safety. Recognizing community action as an effective means of preventing work accidents, many of which occur in the smaller plants of the nation, the Committee issued a "how to" guide setting forth steps in organizing an effective community program. Included in the guide are a sample program for a 1-day community safety conference and list of sources of help for groups wishing to organize a conference.

This guide is the product of a representative committee composed of men and women from the ranks of management, large and small, labor, government, insurance, education, and private safety organizations. It will be of interest to all citizens of a community interested in bringing about a reduction of accidents.

The Bureau of Labor Standards, U. S. Department of Labor has a limited supply of these reprints which will be available without charge on a first come, first served basis.

Seat Belt Standards

A BOOKLET that describes recommended minimum requirements for the automobile seat belt has been issued by The Cornell Aeronautical Laboratory, Inc. The booklet, "Automobile Seat Belts—A Way of Living," is based on the results of several years of automobile crash research by the Laboratory.

Co-authored by Edward R. Dye, head of the Industrial Division, and Alvin C. Smith, project engineer, the 16-page booklet describes in detail all phases of the seat belt with special emphasis on the strength requirements. Illustrations are by Laboratory Artist George Unger.

The strength requirement of the seat belt is the focal point. The two engineers stated that the belt should have a closed or buckled loop strength of 3,000 pounds, enough to withstand a crash up to 15 "G's." In a 15 "G" automobile crash, a 200-pound man would need a belt of that strength to remain in place. Fifteen "G's" represents a very severe crash, above which the auto's body structure would probably collapse.

Although a number of satisfactory methods of attachment to the car exist, the load must ultimately be taken to the strongest anchorage possible—the frame of the vehicle. A seat belt should never be fastened to the seat alone.

The booklet recommends that only one person should be restrained by each belt; that the belt should be adjusted snugly when worn to allow not more than four inches forward hip movement; that fittings, attachments, take-up devices and buckles resist slippage and failure under heavy tensile loads, and that belt parts in contact with the body be not less than two nor more than four inches wide. Simplicity in operation of the buckle is another recommendation.

A special section of test methods describes four ways of determining whether a belt will meet the recommended minimum. Tests of fabric, assembly and anchorage are included.

Although the section is designed chiefly for engineers and manufacturers, the authors recommend that the buyer would do well to demand that his belt salesman produce evidence that requirements set forth have been met.

Laboratory research was carried out in conjunction with the Cornell Committee for Transportation Safety Research, a group composed of representatives of the University at Ithaca, the Medical College in New York and the Laboratory.

The booklet was prepared at Laboratory expense as a public service under an internal research project. It does not constitute an endorsement of any belt by any manufacturer, but merely outlines good and bad features of seat belts as determined by Laboratory research. Copies are available from Cornell Aeronautical Laboratory, Inc., 4455 Genesee St., Buffalo 21, N. Y.

transportation safety

EXPANDED METAL TRUCK BEDS

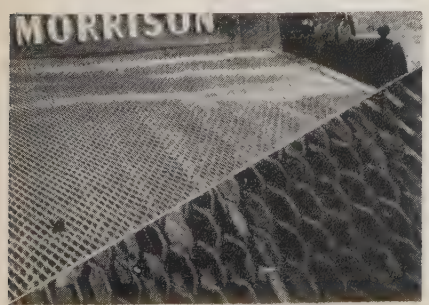
EXPANDED METAL has found another unique application. It is being used in truck and trailer beds to increase pay loads. Fabricated by Morrison Steel Company from grating supplied by Wheeling Corrugating Company it has proven very successful.

State limitations on weight and length of truck and trailer bodies have caused considerable trouble for truckers. The vexing problem is met now by replacing plate steel with the diamond-shaped expanded metal in truck beds. This reduces overall weight of the vehicle by as much as 2 tons.

The fabricators used 4 pounds per square foot grating which was initially installed on one 18 foot straight truck and one 32 foot trailer. The durable, lightweight metal was welded to cross members and side railings. It was found that the new beds topped a drainage obstacle.

Expanded metal is produced from solid sheet that is slit and stretched on precision machines to form a one-piece sheeting with uniform diamond-shaped openings. No metal is removed during the expanding operations. Depending upon the gauge and opening, the sheeting may cover 10 times the area of the solid sheet from which it is made.

For further details, use Key # TS-15 on free Inquiry Card on page 75.



by **DONALD S. BUOK**
Safety Director
Transportation Corps, U. S. Army
Washington, D. C.

How Do You Look At An Accident?

IF SAFETY PEOPLE ever hope to make any great strides in reducing auto accident rates, they must re-orient their thinking on accident responsibility. An accident in which a driver was a **contributing cause** is just as expensive as one for which he was a **direct cause.**

Too many safety men are prone to look at an accident from the strictly legal point of view: Which vehicle struck the other? Which driver's actions were directly responsible for the collision or injury? Another too common point of accident analysis is that which attempts to determine which driver was **most** at fault.

Both types of thinking are outmoded and unsatisfactory for professional driving standards. Both skirt the issue of accident prevention.

Most driver teaching stresses the defensive driving technique. It should be followed up with an accident responsibility system based on, let's say, baseball rules: It's not only who tags whom for the "out," but also what errors will be charged against the player who is caught off base and gets himself put out. In other words, he who contributes to an accident, helps cause it.

A Test for Supervisors

In order to teach this new code of accident responsibility, the teacher also must know the code and its rules. He will find his viewpoint reflected, not only in the accident "verdict," but more importantly in the corrective action taken (or not taken) to prevent recurrence.

In teaching Army and fleet safety personnel the basic rules for judging accident responsibility, I have done some research and study of typical common highway accidents and investigators' analyses of them. The students in our traffic and safety courses at New York University and

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(Use Key # F-32 on Inquiry Card on page 75)

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(Use Key # F-33 on Inquiry Card on page 75)

Northwestern University are given a test covering about 20 actual cases. They are asked to consider the driver's accident report very carefully and then indicate for each case whether our driver was the cause or victim of his particular accident.

Then, and this is very important, persons taking the test are asked to explain why the respective drivers were adjudged to have either caused the accident or been a victim. This provides a key to their knowledge and understanding of accident-causing situations, and the logic employed in arriving at such decisions. If knowledge and logic is faulty in the classroom, it surely will be in the field; therefore, to strengthen the accident prevention program they must be corrected immediately.

Of course, the ideal method for identifying and correcting faulty viewpoints on accident causes is to take such groups out on real accident investigations. Whenever possible, we do this. Further, to provide realistic field study, we often simulate real accident situations complete with crash, skid marks, and all the evidence most characteristic of the accident—even to coaching the respective drivers in vigorously reporting their respective alibis and pre-accident situations. This has proved to be very effective and dramatic. On page 63 are a few of the classroom cases we use.

Not To Place Blame

The prevention of accidents of the sort described in the test questions is largely dependent on the investigator's ability to analyze an accident; reconstruct the situation; identify the causes or contributing causes on the part of the drivers, and then introduce practicable and appropriate measures to offset the driving failures. The purpose of the investigation is not to place blame, but to seek facts to help prevent recurrences. It is not predicated on legal right-of-way, nor on the law, but it is primarily dependent on such understandable factors as courtesy, patience, common sense, and good judgment. Every accident should be analyzed in the light of this: If this driver were again to be placed into the same situation, what precautions should and could he now take to help prevent a recurrent accident?

Test Your Drivers

Having gained the fundamental thinking behind this approach to judging accident responsibility, fleet supervisors and their safety men, are on the threshold of a positive and practical means of reducing vehicle accidents. The next step is to educate the driver to think and act along the same lines. Such is the stuff of which effective accident prevention is made.

Needless to say, to suddenly spring this type of accident judgment on the driver without explanation would throw him into confusion and would likely result in bickering, resentment and griping. But today's cases must be judged against the facts of each particular accident. Generalities won't work. Rights-of-way are not the issue. Preventability is our concern.

At the very earliest opportunity, the drivers should be called together and told the facts. With the national accident rate still climbing, with accident settlement costs rising, with economy pressures becoming increasingly stiffer, and with supplies gradually becoming harder to get, it becomes imperative to adopt a more realistic approach to judging responsibility. Let's quit alibing for accidents—and start preventing them. We can't afford accidents. They are cheaper to prevent.

The men should be told that they are professional drivers, presumably of the highest caliber; therefore, it is proper to scrap the amateur standards of judging accident responsibility employed by part-time, laymen, passenger car drivers. This is a business—not a pleasure car operation.

Accident cases similar to the two mentioned could be given as a written test. To save time, the answers could be supplied after the test questions have been given, and each driver asked to rate himself as to his knowledge and understanding of accident responsibility. Better yet, accident cases should be taken from

Test your knowledge and ability to judge accident responsibility based on modern defensive driving techniques . . .

In passing judgment on these accidents, you will assume the following: Each report is based on a true accident; each driver's statement is intended to be true and complete.

*One vehicle will be identified as one operated by your driver. You decide in each case whether "your driver" **caused** the accident or was **victim.***

Evaluate each case on the basis of reasonable preventability. If you feel "your driver" definitely caused or helped cause his accident score the problem "C." If you feel "your driver" was solely the "victim" of circumstances beyond his reasonable control, score the accident with a "V" for victim.

your own file. Such a meeting becomes a howling success when a question and answer period is provided.

Of course, just one meeting devoted to the explanation of this new principle of judging accident responsibility will not be sufficient to get the desired results. Several successive meetings should be devoted to the study of accident situations. Visual aids, such as those previously mentioned, should be used—especially diagrams such as magnetic blackboards or videograph, with movable vehicles, road intersections, traffic lights, and so on.

Use "Kangaroo Court" Trials

One of the most effective ways I've found to get drivers (and supervisors) to grasp the new principle is the use of the so-called kangaroo court. Real or typical accident situations can be used. A panel of drivers —or drivers, supervisors and, perhaps a union representative—should do the judging. However, when the accident has been explained, the judges should aim to determine if it was preventable or non-preventable—and **not** who hit whom or who should get the "blame." Incidentally, this need not be limited to vehicle accidents—it can be applied to every accident from industrial to marine.

This procedure is being employed by more and more safety directors. It works well when used to review every accident. However, I prefer a refinement and improvement that has a dramatic effect. Let our driver describe all conditions previous to, during, and after the accident. Listen sympathetically. Let your attitude be calm, kindly and friendly.

When all apparent discussion of the case is over, slip this question in

EXAMPLE—DRIVER'S STATEMENT

"My vehicle was parked at the curb in a parking stall. When I came back, the policeman informed me that a truck had swerved to miss a child, and had sideswiped my parked vehicle." In this case, "your driver" would be ruled "victim" since there is no evidence of driving failure on his part. That's all there is to this test. Remember, we are not analyzing these cases on the basis of **legal** responsibility! We are not deciding who is at fault. We are determining who helped to cause the accident.

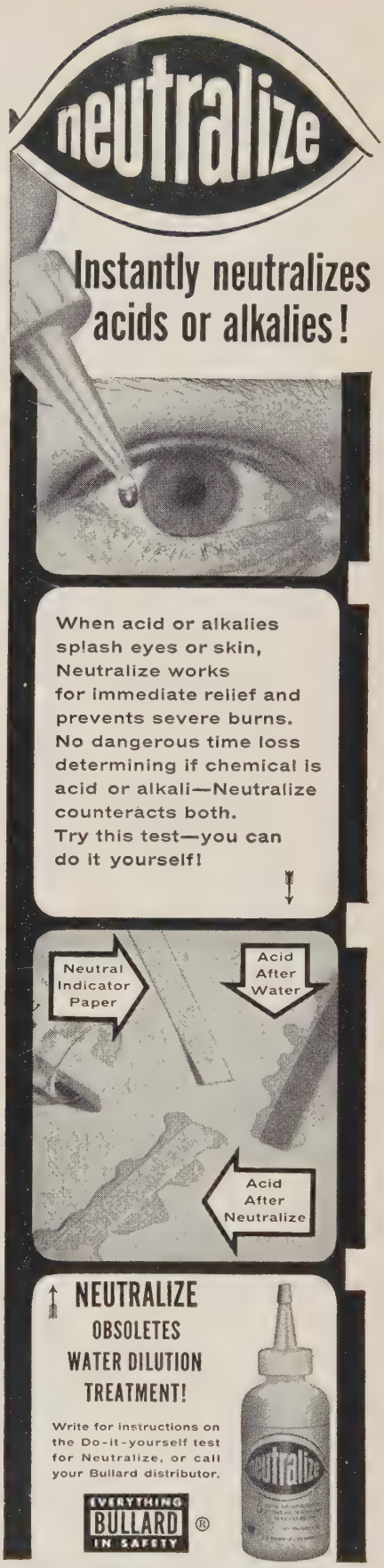
CASE 1—DRIVER'S STATEMENT

"I was driving within the speed limit of 30 mph, when I approached the intersection. There were no signs nor lights. I was almost across the intersection when this other guy, coming from my left, hit my left rear fender. He left skid marks 44 feet long. I did not put on my brakes, because I tried to get out of his way when I realized how fast he was going. Damage to my vehicle was a dent in the fender. The other vehicle had only a broken headlight."

CASE 2—DRIVER'S STATEMENT

"I was driving 45 mph at night on the highway. A speeding car passed me from the rear, cut in suddenly, and crowded me off the pavement. My right wheels hit a soft shoulder, so I pumped the brakes and slowed down to about 20 mph. Then I tried to ease back on, but the right rear tire skidded along the edge of the pavement, causing me to swerve and hit an oncoming vehicle headon. My wheels cut into the shoulder, although it looked level with the pavement. My supervisor contacted the state highway department and said that if the road was in good condition this accident would have not occurred."

The answers are on page 67.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gently: "If you found yourself in this situation again, what would you do to avoid the accident?"

Then a most amazing thing happens. The driver will tell you that the next time, by golly, he won't let another guy get him into a similar situation. No, sir. He'll let him have the right of way, or he'll stay away from him (keep the proper distance), or he'll keep his speed down even if he's behind in his schedule, or he will do this or that. He even might go to the blackboard **and show how he could have avoided the accident!**

Very often his face gets very red when he realizes what he has done—admitted that he **contributed** to the accident. If he doesn't catch on immediately, ask him kindly why he didn't do that kind of maneuvering to avoid the present accident.

But then don't ride him. Drop the subject and go on to the next case or adjourn the court. Let the fellow go on his way thinking over what he said. Experience shows that he will think about it for a long time to come . . . and thinking is the foundation of "premeditated prevention!"

Certainly, this is far better than trying to ram the very same words down his throat—while he's thinking up counter arguments, excuses and alibis. His own admission that the accident was avoidable is far more effective than your say so.

Of course, some of the old boys are very cagey. They may have to be led to the blackboard and asked did they think that by turning this way or that, or by coming to a full stop, or by doing this or that the accident could not have occurred.

Often-times having another driver explain how he manages to avoid such accidents will get better and more convincing results than the same treatment from "some theoretical driver"—as safety men, supervisors or other non-full-time drivers are frequently regarded. The voice of experience is a powerful influence.

Frankly, in gaining acceptance of this principle, the greatest problem will not be with the driver! Given a set of reasonable rules, he will adjust himself readily enough. The greatest problem will be for the driver supervisor and safety director to adjust their thinking.

The supervisor, for example, being closer to a particular group of drivers, tends to develop a "protective attitude" over them. While, generally, he knows their faults, and lets them know that he does, he is inclined, often unconsciously, to take their sides when they are "in trouble." His motive and charity is noble . . . however in so doing, he defeats the very objective for which he works.

When an accident occurs, most of us instinctively try to protect ourselves, and those under our supervision, and cast all the blame on the other fellow: logic notwithstanding. In so doing we divorce ourselves from the opportunity to accomplish corrective action!

Fleet safety men and driver supervisors can do a better job of protection—protection of job and future—if they not only will teach their drivers defensive driving techniques but, also, develop an honest and self-corrective attitude toward accident responsibility.

Typical instances of misguided protective instinct by a driver supervisor are plentiful. For example, consider this situation: "In one case, a truck stopped behind another vehicle on a steep hill because of a traffic light. The lead vehicle, in starting up, rolled back into our 'hero,' damaging the front end of his vehicle. This driver and his supervisor were equal in their sincerity in blaming the accident on the 'carelessness of the other driver.'

"Investigation actually revealed that our truck driver had pulled up and stopped within 4 or 5 feet of the other vehicle on a steep hill—not only inviting disaster but denying himself the precious necessary time and distance to give a warning signal, should the other vehicle start to roll back.

"Less than one month later, another driver from this same location chanced to stop his vehicle on a similar hill. On this occasion, the 'other guy' pulled up behind our vehicle, and stopped 'right under my tailgate' — according to our driver's report of the accident. In starting up, our vehicle rolled back 'just a little' damaging the radiator grille of the other vehicle.

"This time, our driver and his supervisor sincerely contended that the accident was caused by carelessness on the part of the individual who had stopped behind him, because 'he had followed too closely'!"

When I first came across this type of emotional, irrational and immature mentality, I decided it was unusual—a product of ignorance. As my experience in fleet safety has grown, I have altered my opinion slightly. It is not unusual; it still is a product of ignorance! While it brings a measure of comfort to those involved, it essentially endorses the accident by accepting it as "happenstance."

As we review the foregoing incident in the light of cold logic, we can see that the supervisor was trying to protect his drivers from being blamed for both accidents. Actually, he was doing more harm than good. He was instilling in each driver's mind several conditions:

1. Selling him on the concept that he was the "victim" instead of a contributing cause to the accident.
2. Encouraging the possibility of causing the same type of accident to occur in the future, since no corrective action was taken.
3. Establishing a precedent of endorsement for other drivers.
4. Encouraging a dual standard of interpreting and reporting accidents.
5. Encouraging one-sided defensive argument. A driver should be taught to think, "How did I contribute to this accident?"
6. Instilling a conviction in the driver that the supervisor or safety will "front" for him to fight his accident battles.

All of these points have a bad effect on that fundamental principle of safe driving—Good Attitude. They only make the supervisor's problems worse. Moreover, he also makes it difficult to reduce the accident rate, and weakens the very *justification* for individual and collective effort!

(Continued on page 67)

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INSIDE PAGES

(pages 2 and 3)

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NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
From the CARELESS ACTS of others the WISE MAN corrects his own
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Very often the immediate superior and the safety director also acquire the supervisor's protective attitude—especially in smaller companies, where they may be burdened with several functions; that of driver supervisor, examiner, trainer, personnel director, and other extra duties.

However, more frequently, the higher management representative is inclined to adopt a "legal" attitude of judging whether his driver or the other fellow was "most" at fault in an accident. He tends to place important emphasis on accident litigations, claims, and insurance adjustments to a greater extent than does the driver supervisor. Thus, it may be difficult for him to shed the "It's not our driver's fault" attitude.

Experience prompts me to urge safety directors to let the legal department of the company's lawyers handle accident cases with regard to the legal techniques. It's up to them to split hairs and argue the cases according to established legal practice and precedent. The exception is, of course, if the safety director is called for legal testimony. There he should stick to the bare facts. Basically, the safety director's interest (and the supervisor's) should be the preventive problem! What caused the accident and how to prevent recurrence. Never forget that!

For effective accident reduction through successful driver education on avoiding involvement as "contributors," an investigation results in separate sets of reports, one for claims—one for safety. If you must make out both reports, give the "whodunits" to the lawyers, and the "what and why" to safety.

Naturally, both the driver supervisor and the safety director have a common problem. Also, the company expects that they will function as a harmonious team for the good of the firm. Yours will be a safer operation when all will try to live up to the highest driving standards; based not on the emotional instincts, not on the "whip" treatment, but on logic—the same logic that inspired defensive driving techniques. Accidents can be prevented—if we remove witchcraft and "white-washing" from our accident analysis. In the final analysis, accident prevention means **improved supervision.** Every accident reflects some aspect of command failure. Are you honestly identifying these failures (untrained driver, unqualified driver, too tight a schedule, unsafe equipment, lack of incentive, failure to generate interest, lack of responsibility—and so forth) and correcting them?

From an address delivered at the 42nd National Safety Congress.

(For details, use Key # F-35 on card on page 75)

Answers to Auto Accident Quiz on page 63

Now that you have passed judgment on these cases, let's review the answers to see how well you made out. Don't be disturbed if you didn't get a perfect score. Very few safety men have! Each case should have been scored as a "preventable" accident.

1. Caused by our driver. The statement that he was "almost across" the intersection when the other vehicle hit his rear fender, indicates that our driver had wilfully pulled out into the path of an oncoming vehicle, and then attempted to beat it across the intersection. Except in the legal aspect, it is unimportant that our driver was nearly across the intersection! This accident could have been prevented if our driver had waited until the oncoming vehicle had crossed.

2. Caused by our driver. The technique used by our driver to get back onto the pavement was wrong. He should have slowed to less than 10 mph, positioning his right front wheels at least 2 feet from the edge of the pavement, before turning the front wheels sharply back onto the pavement. This would have precluded skidding along the edge of the pavement. Of course, first he should have looked each way before attempting this pull-back. This is especially important, since the rear view mirror shows only that directly behind, and fails to reveal vehicles following in the adjacent lane.

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inside the trade

The appointment of Dr. Joseph T. Noe as medical director of Wyandotte Chemicals Corporation was announced by George H. Baker, Vice President, Employee and Public Relations. The vacancy was created by the death of Dr. William H. Honor early in March. Dr. Noe, who has been medical director of The East Liverpool District Pottery Group since 1948, will be responsible for the development and administration of the health services for the employees of Wyandotte, in line with the expanding health maintenance program currently underway.

The formation of a director systems department in Westinghouse Electric Corporation, responsible for the engineering, manufacture and sale of specialized automatic control systems, has been announced by J. K. Hodnette, vice president in charge of the apparatus products group. Named as manager of the new department is L. W. Golden, who is a graduate of Stanford University, joined Westinghouse in 1946, and has worked on various assignments in the materials engineering department. Headquarters for the director systems department will be located in the Pittsburgh area.

The Factory Mutual Engineering Division recently occupied its new home office building on the Boston-Providence Turnpike in Norwood, Mass. The move from the former location in Boston brings the national headquarters to the 85 acre tract on which the organization has been operating its research testing station since 1942 and Laboratories since 1951.

James P. Kendrick has been appointed sales engineer for the territory of Peru, Bolivia, and Chile for Mine Safety Appliances of Pittsburgh, Pa. Mr. Kendrick, a native of Dallas, Texas, is a graduate of Southern Methodist University, where he earned an AB degree. He recently finished Mine Safety's training course for safety engineers. Mr. Kendrick's address is in care of Custer and Thommen, S. A., Casilla 733, Lima, Peru.

Willson Products, Inc., manufacturer of sun glasses and industrial safety equipment has been purchased by Ray-O-Vac Company of Madison, Wisconsin. The Reading, Pennsylvania firm, founded in 1870, is today one of the leading manufacturers of industrial protective devices.

Mr. J. Clyde Ryan, executive Vice President of the Ray-O-Vac Company, was elected President and General Manager of Willson Products, Inc., following the annual stockholders meeting.

Mr. Ryan succeeds Mr. Thomas A. Willson who was elected Chairman of the Board of Directors. Dr. Frederick Willson, who has been Chairman of the Board since 1942, has retired. Thomas A. Willson, Jr. was elected Vice President in Charge of Production.

Other officers elected are: William C. Weeks, Vice President in Charge of Sales, formerly Sales Manager, Distributor Division of Ray-O-Vac; F. Saul Stump, Secretary-Treasurer; A. C. Morgenson, Assistant Treasurer; and G. C. Guild, Assistant Secretary.

The appointment of Joseph F. Miller as Managing Director of the National Electrical Manufacturers Association has been announced by Mr. A. F. Metz, President. Mr. Miller, who has been Assistant Managing Director since August 1, 1954, succeeds Mr. William J. Donald, who retired April 30, 1955 after twenty-one years.

Before coming to the National Electrical Manufacturers Association in August, 1953, as Recording Secretary of the Wire and Cable Section, Mr. Miller had been serving as Director of the Copper Division, Metals and Minerals Bureau, of the National Production Authority, Department of Commerce. He is a graduate of Princeton University and Harvard Law School.

Francis A. Wandell has been elected to the board of directors of Fenwal Laboratories, Inc., Framingham, Mass., it is announced by E. J. Poitras, president. Appointed as general manager of the company last December, Mr. Wandell brings to the board of directors the results of his broad experience in the pharmaceutical field in the United States and South America, as well as an educational background in medicine, chemistry and law.

The Safety Tool Division of Ampco Metal, Inc., Milwaukee, Wisconsin has announced the appointment of several stocking distributors throughout the country which will serve their respective trading areas for distribution of the complete line of Ampco spark-resisting hand tools.

The companies appointed are the Aviation Service Supply Company in Kansas City, Missouri and Ogden, Utah, the Amco Corporation in Linden, New Jersey, the Giller Tool Supply Company, Inc., 159 Leslie Street, Dallas, Texas, and the Mississippi Foundry and Machine Company, Inc., 300 West South Street, Jackson, Miss.

James A. Arter has been appointed Vice President in Charge of Manufacturing for Ampco, according to an announcement made by J. D. Zaiser, President. J. P. Henry, formerly Assistant General Sales Manager, has been appointed General Sales Manager. R. J. Severson, formerly Manager of Technical Sales will become Assistant General Sales Manager.

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What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

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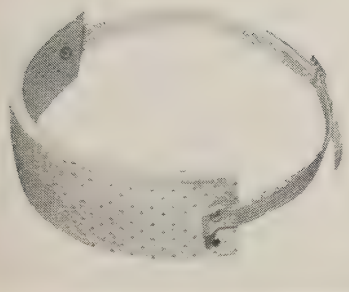


VENTILATED SWEATBANDS

(Use Key # 913 on Inquiry Card on page 75)

AIRCOOL SWEATBANDS, made of perforated foam rubber, reenforced with a cotton backing, are announced by Pulmosan Safety Equipment Corp. The new perforations provide greater comfort and efficiency by aiding evaporation of water and circulation of air. The sweatbands have an adjustable elastic headband; and the foam rubber body is durable, tear resistant, soft and resilient.

TREE & WEED KILLER

(Use Key # 914 on Inquiry Card on page 75)

CHEMICAL CONTROL of trees and brush by soil application of one of the new substituted urea herbicides, "Telvar" W weed killer, is now recommended for utility right-of-ways, railroads, and drainage ditches in six states. The stem of the plant is encircled with a four-inch ring of spray, about a foot from the base. It is not necessary to wet the stem of the plant. Treatment is effective at any time of year. Two to four ounces of the chemical are used in each gallon of spray.

This method of tree and bush control applies only to Oklahoma, Texas, Kansas, Missouri, Arkansas, and Louisiana. Test work is continuing for climatic conditions, plant species, and soil types in other areas. Woody plants successfully controlled include: elm, red cedar, persimmon, hackberry, willow, sumac, buckbrush, and various species of oak.

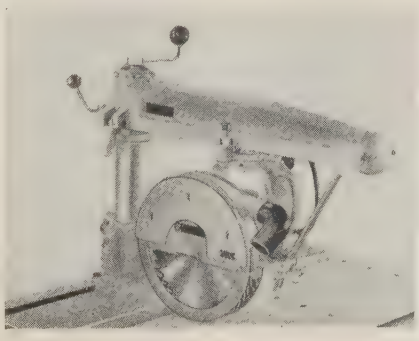
"Telvar" W weed killer is a product of the Du Pont Grasselli Chemicals Division. It has been used as an industrial weed killer at dosages of 40 to 80 pounds per acre to keep the ground free of low vegetation for an entire season or longer. Because of its extreme potency, it should not be used near valuable trees or plants, or on areas into which the roots of such trees may extend. The material is non-volatile and non-flammable, and low in toxicity to people and animals under conditions recommended for use.

RADIAL ARM SAW GUARD

(Use Key # 915 on Inquiry Card on page 75)

A FREE-FLOATING action guard for radial arm circular saws has been developed by De Walt, Inc. The guard consists of two metal circular safety rings free-mounted on each side of the saw's hood. These floating rings adjust automatically for depth and angle of cut, giving continuous protection on the lower part of the saw blade, while the upper part is completely enclosed in a metal hood.

Suitable especially for residence builders and commercial woodworking shops, the guard can be used on a variety of operations, cross cutting, ripping, miter cutting, bevel mitering, etc. without interfering with normal actions and without special adjustment of the guard. While the guard was designed for installation on De Walt saw machines, it can be used on the machines of other companies subject to review by the guard manufacturer.



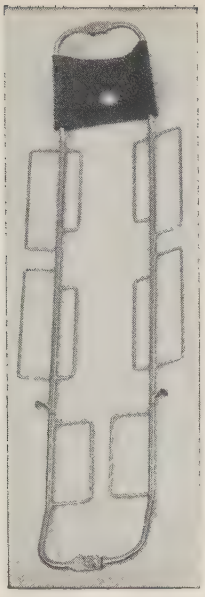
AUTOMATIC EXIT LIGHTS

(Use Key # 916 on Inquiry Card on page 75)

ILLUMINATED SAFETY signs and emergency exit lights can continue to be lighted even when there is a failure of the regular power supply. The exit lights and safety signs of the Electric Cord Co. operate off regular 115 volt AC service, but when the service fails, the signs automatically are switched to battery operation and low voltage bulbs. Picture shows unit with sign panel removed.

The emergency units are available with either dry or wet batteries, including nickel cadmium batteries which require little maintenance and withstand vibration and temperature extremes. Dry batteries require battery replacement after every use and also every year. The wet battery units are automatically recharged by the regular service current; and if the light has been on battery power for a long period so that the battery's charge is low, the recharge unit automatically shifts to a high rate of recharge to bring the battery back to full capacity in a short time.

Standard "Exit" signs have 6" red letters on a white translucent background. Other standard sign wordings include: Danger, Keep Out, No Smoking, High Voltage, To Shelter, Out, First Aid, Fire Alarm, and Fire Extinguisher. Special wordings are also available. These automatic signs are recommended for safety and panic prevention in industry, public buildings, theaters, stores, etc.

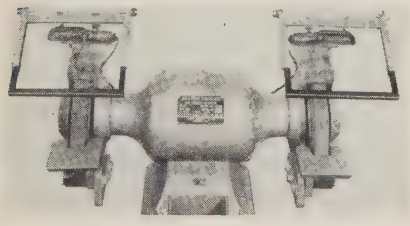


SCOOP TYPE STRETCHER

(Use Key # 917 on Inquiry Card on page 75)

A NEW KIND of first aid stretcher that permits the injured person to be picked up and transported with a minimum amount of movement of his body is announced by the A. E. Halperin Co., Inc. The company claims that the new Robinson Orthopedic Stretcher allows attendants to carry the victim to the first aid station without causing any further damage or injury to him.

The injured person does not have to be lifted onto the stretcher, but is positioned by means of a "scoop" principle. The unit is made of light-weight tubular steel with a canvas head rest. It can be adjusted up to a 7' 3" length and can support patients weighing over 300 lbs.



ADJUSTABLE GRINDER SHIELD

(Use Key # 918 on Inquiry Card on page 75)

THE SAF-SIGHT shield is a versatile eye and face protective guard for general-purpose pedestal and bench grinders. Made by the Junkin Safety Appliance Co., the safety shields are easily mounted and can be adjusted for various grinding wheel operations.

A laminated safety glass and a replaceable cover glass are held in a sheet metal frame. The mounting arm and bracket are attached to the grinder wheel guard by means of two bolts. When desired, the unit includes a light mounted below the shield. The narrow frame for the shield allows plenty of room for the operator's hands and work. It can be set at any height or angle, including side work.

SKIN CREAM FOR TRANSFER INKS

(Use Key # 919 on Inquiry Card on page 75)

A SPECIALLY COMPOUNDED cream that acts three ways for protection against anilin and barium based transfer inks commonly used in gelatin process printing is announced by Chemical Specialties, Inc. Called the CSI Hecto Cream, it contains mild solvents that prevent setting of the dyes. Another ingredient suspends the ink solution so that it cannot be reabsorbed by the skin. Detergents in the cream form efficient suds at wash-up time to float away the inky soil.

The special skin cream does not cause drying of the skin, chapping or soreness; and does not remove nail polish. Meeting the specifications of several branches of the government, the cream is suitable for persons handling the special carbon papers, ribbons and rolls involved in gelatin process printing in offices, banks, schools, etc.

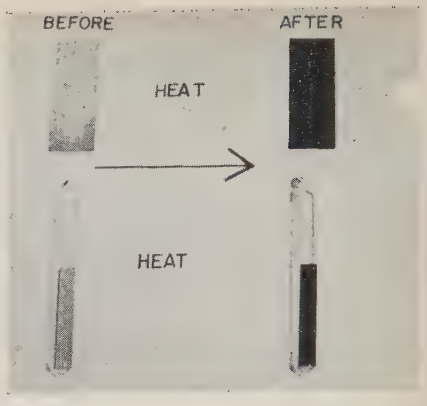
SOFT-FACED SAFETY HAMMER

(Use Key # 920 on Inquiry Card on page 75)

LITTLE BEAVER Industries has developed and marketed an aluminum-magnesium hammer that they claim is setting new standards in cost saving and durability. Exhaustive testing by aeronautical and industrial laboratories has shown the new "Hefty-Hammer" lasts from 10 to 15 times longer than most standard, soft-faced tools.

Because it features a 13% elasticity factor, this non-marking hammer will not chip or shear and can be dressed over and over again. It is being produced in sizes ranging from one to five pounds for machinists and maintenance men. It also provides a solution for busy set-up men who complain of handle breakage and fractures when positioning heavy dies, driving gear arbors, opening and closing jigs, etc. Breakage and fracturing are eliminated in the aluminum hammer because strength and flexibility are built into the tool through integral casting. The handle can be bent double without breaking.

And to safety conscious companies, the Hefty-Hammer offers dimpled finger grips and accurate positioning of its gravity center. In this way correct balance is assured and fatigue is lessened.



THERMOSTATIC PAPER

(Use Key # 921 on Inquiry Card on page 75)

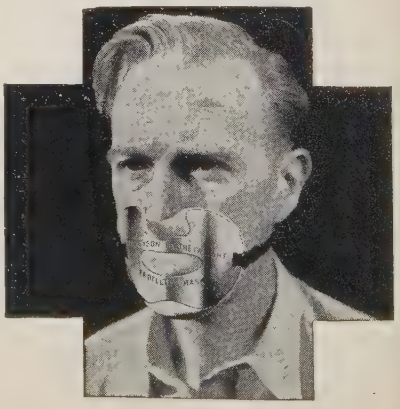
HEAT-SENSITIVE papers have been developed by The Paper Thermometer Co. for accurately determining temperatures and at the same time recording the temperature effects permanently. "Thermopapers" are a graded series of heat-sensitive papers calibrated for temperatures from 113 to 580 degrees F. When the temperature reaches a predetermined amount the white coating turns black. The maker claims that accuracy is within 1 percent above or below the stated temperature. The paper strips are available open or sealed in glass tubes.

Fire prevention uses include placement of the strips around furnaces, hot air conduits, steam pipes, electrical equipment, motors and other areas where fires might start from overheating. They can be used for recording temperatures of ovens, sterilizers, autoclaves, drying operations, etc. They can also be packaged with biologicals, foods and heat sensitive products to determine maximum temperatures attained during shipment or storage.

IMPROVED FILTER MASK

(Use Key # 922 on Inquiry Card on page 75)

THE FEATHERWEIGHT Protective Mask #36 is made of soft pliable aluminum for close fitting around nose and mouth contours. The outstanding feature of the mask, developed by Dockson Corp., is the integral clips which hold the sterilized cotton gauze refills. Recent improvements in the filtering medium have increased its efficiency, and the unit's light weight and comfort make it acceptable to workers.



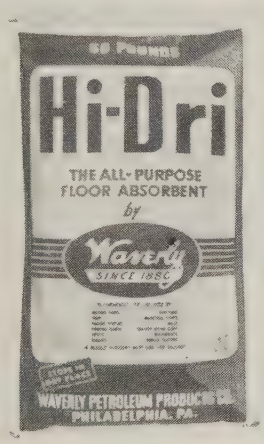
ALL 'ROUND DEODORIZING

(Use Key # 923 on Inquiry Card on page 75)

A NEW, MODERN deodorizer designed for dozens of uses was announced recently by The C. B. Dolge Co., manufacturers of chemicals for maintenance. Called "Rounds," this cake-type deodorizer features a new, locked-in aroma that lasts until the aromatic materials is completely vaporized.

Although especially recommended for urinals, lavatories, storage and locker rooms, closets and garbage storage areas, there are many other uses, wherever odors offend. To extend the usefulness, an easy-to-use wire hanger is included with each package, along with clear, simple instructions and suggestions.

Each package keeps eight large, long-lasting cakes factory fresh until needed. For extra protection, each cake is wrapped in heat-sealed cellophane. The pure-white cakes are formed under tremendous pressure to assure uniformity, long life, and maximum effectiveness.



ALL-PURPOSE ABSORBENT

(Use Key # 924 on Inquiry Card on page 75)

A NEW all-purpose grease absorbent for floors, combining unusual traffic breakdown resistance with maximum protection against slipping accidents and fire hazards, has been introduced by Waverly Petroleum Products Co.

The absorbent, known as Hi-Dri, can be used in any mill, plant, shop or factory for both production installations and storage areas where spillage of liquids occurs. In addition to oils and greases, the compound absorbs solvents, water, water solutions, acids, paints, resins, syrups, chemicals, waxes, inks and similar fluids. It is effective on wood, concrete, brick, steel, compound and all other types of flooring. The manufacturer states that it does not readily pulverize, break down or cake under heavy traffic, nor turn to mud under wet conditions. As a result, it keeps floors cleaner, eliminates slippery surfaces, and presents flash fires.

The absorbent is spread by hand or a scoop and left there until it has reached the saturation point. Traffic may proceed over the layer as usual. Dirt and liquids absorbed by Hi-Dri are readily swept from the floor with a broom.

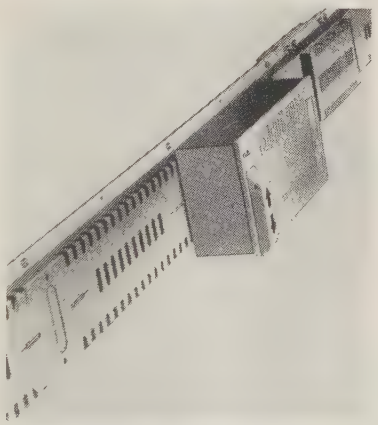
HAZARDOUS LOCATION FLARE

(Use Key # 925 on Inquiry Card on page 75)

AN ELECTRIC FLARE which flashes a red warning signal 1500 feet and more and is completely safe in any hazardous location is available to industrial plants for factory or yard use, for truck fleets and for private car use. The product is the "Flash Flare," developed by the Buffalo Weaving and Belting Co., automotive parts division, Alliance, Ohio.

The new flare has been tested by Electrical Testing Laboratories, Inc., New York, and was found to meet the latest SAE specifications for electric emergency lanterns, passing all tests for vibrations, moisture, dust, corrosion, reliability and visibility, as required by ICC regulations.

The electric flare is suitable for transporters of flammable or explosive products and foodstuffs. Being fireproof, it is suitable for use in in-plant operations as a warning and signal device around docks and other trucking areas. The flasher will operate 22 continuous hours without loss of brilliance. Increased intensity of the light and the 19-inch height of the cone-shaped flare account for the improved visibility. The cone is designed with a series of rings from which the light is projected outward as it travels up the cone from the bulb. The steel base is heavily weighted to prevent toppling in heavy winds. It holds a standard six-volt battery and lantern bulb.



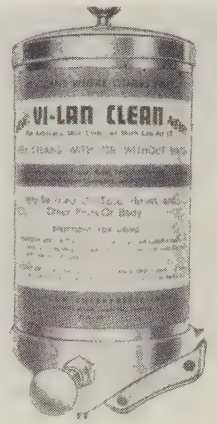
SAFETY BUSWAY

(Use Key # 926 on Inquiry Card on page 75)

THE ROLLER-SMITH Corp. has recently introduced a new concept in busway systems called UNI-BUS Busway, a low voltage drop, plug-in and feeder system. The new system provides safety to personnel by using an interlocked safety slide over plug outlets which cannot be opened until covered by a plug. This feature eliminates the possibility of accidents and costly shut downs. Two interlock buttons are depressed by heavy studs on the back of the plug box which releases the safety slide interlock. Opening the safety slide interlocks the plug to the UNI-BUS housing so that it cannot be removed before the slide is again closed. Personnel can never come in contact with live bus bars.

The safety plug after being attached to the plug-in busway cannot be connected to the bus bars until after the cover has been closed and the safety-slide opened. At this time *only* is it possible to close the circuit.

Added safety in operation is claimed for features which allow high short-circuit strength in carrying heavy current loads.



ANTISEPTIC SKIN CLEANER

(Use Key # 927 on Inquiry Card on page 75)

DAMERON ENTERPRISES, INC., has perfected and is now marketing VI-LAN CLEAN, an antiseptic, all-purpose skin cleanser, powered with "Actamer," a potent additive developed by the Monsanto Chemical Company, and approved by the American Medical Association. Actamer is a skin bacteriostat of sufficient strength to reduce resident skin bacteria by as much as 97%. No toxic ingredients are used in the product, and its lanolin content replaces human oils and eases chapped hands, cracked skin and other troublesome skin conditions.

It is said to clean hands quickly and effectively, and retard the menace of dermatitis. It eliminates the need for commercial solvents and detergents and may be used with or without water. It removes greases, paints, acids, carbon black, printing inks, asphalt, creosote, crater compound, rubber and gasket cements, and other foreign soils that are difficult to remove.

This product is marketed in polyethylene bags, also in pint, quart and gallon containers. For industrial usage, the company also offers various dispensing units for wash room and on-the-job service, affording convenience, economy and all-around usefulness.

SILICONE MEDICATING AND PROTECTIVE CREAM

(Use Key # 928 on Inquiry Card on page 75)

SILICOTE CORPORATION, announces a new type of skin protectant under the Registered name "Siladerm." According to the company, clinical reports and laboratory experimentation have proved that Siladerm can be used as a curative agent for irritated or lacerated hands as well as a protective coating in handling harsh solutions. The product also permits the skin to "breathe" while guarding it against damage from external irritants.

It is prepared in both cream and ointment forms. The cream is pleasant and easy to apply. The ointment has a medicinally valuable petrolatum base with stronger healing and protecting properties. Both are available in one-ounce tubes, or one and five pound jars.

IMPROVED HELMET

(Use Key # 929 on Inquiry Card on page 75)

WORKERS on jobs that involve head-injury hazards are offered added protection in the new Skullgard plastic safety helmet introduced by Mine Safety Appliances Company. Designed for extra protection in the danger zone at the front, top, and back areas, the new Skullgard incorporates a special reinforcement in these three vital areas.

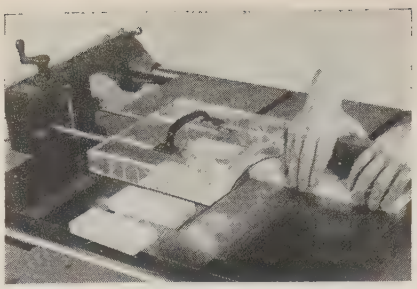
New molding techniques, better materials, and improved production methods are said to have added to the protection offered without increasing the hat's weight. It is high-pressure molded in one piece from hard, smooth, laminated plastic. The design, rounded contours, and strength of the helmet provide effective deflection of falling or flying objects and offer protection against bump-hazards for men working in close quarters.

NEW SAW GUARD AND GUIDE

(Use Key # 930 on Inquiry Card on page 75)

MOST OPERATIONS on a circular table saw can now be guarded by a new type of safety guard. After more than three years of experimentation in schools, colleges, government agencies, vocational schools for the blind, military installations, woodworking shops, and veterans administration hospitals, Brett-Guard Company, is introducing "the Brett-Guard and Guide" for table saws with blades of six to sixteen inches diameter.

Exclusive features are the precision-engineered guard standard of cast aluminum, and the transparent shield of shatter-resistant one-half inch thick Plexiglas plastic which covers the saw while allowing full vision and complete accuracy in a wide variety of operations, such as mitering, cross cutting, compound mitering, ripping, rabbeting, tenoning, dadoing feathering, diagnoal sawing, template cutting, drop sawing, plowing and tongueing. The last nine have been nearly impossible to guard.



A simple flick of the knob sets the guard into any of three operating positions (in aligned holes) in extension plates attached to table top. The guard itself is capable of providing horizontal and vertical pressure, and can be used as an overriding fence for angular work. It also acts as a guide, prevents physical contact with the blade, and the guard resists displacement while in use. Its ease of re-positioning encourages its use on all operations.

The new guard has been approved by the following: the New York State Department of Labor; Board of Standards and Appeals; U. S. Army for military installations and Veterans training centers; the Oregon Industrial Accident Commission; and the New York City Board of Education; and is used by schools for the blind, and government agencies.

FOLDING STEEL BARRICADES

(Use Key # 931 on Inquiry Card on page 75)

A COMPLETE LINE of folding steel barricades from four to ten feet long combining heavy-gage steel top members with steel legs which fold into the tops to provide compact, easily handled units, is announced by the All-Craft Mfg. Co. Two of the barricades can be easily carried and set up by one man. The legs lock in place, making the barricades sturdy and rugged.

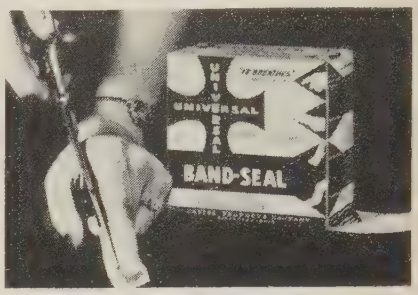
Carrying handles and lantern hooks are welded into the top members and holes are provided for attaching electric "flasher" lanterns. Finished in glossy pavement yellow, either plain or striped, the barricades are said to be easy to see under all light conditions. The manufacturer states that they are competitive with wooden barricades in first cost and that their longer life and single-unit construction make them economical to use.

LATEX CREPE BANDAGE

(Use Key # 932 on Inquiry Card on page 75)

UNIVERSAL BAND-SEAL for the treatment of cuts, wounds, sprains, etc., is now marketed nationally by The Caster Products Co. It is a latex crepe bandaging tape that sticks only to itself—never to skin and hair—stays firmly in place without ties or pins or clamps. It has no sticky residue, and the porous crepe allows air to penetrate to promote healing, yet is completely water-proof.

To apply, cut off a strip from the handy roll to the proper length, separate protec-



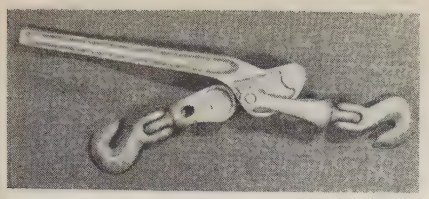
tive latex covering from the gauze bandage, fold the pad of gauze to fit wound, and apply Band-Seal. By pressing the edges of the latex crepe together, a protective, water-proof sheath is formed. The edges can then be trimmed to form a neat bandage.

This convenient dressing is an indispensable necessity for first-aid stations, schools, orthopedic wards, gymnasiums, workshops, homes and hospitals. It can be used as a firm support in the care of sprains and strains. By stretching and wrapping it tightly around an artery above the wound, it becomes a quick and positive tourniquet.

ANTI-SLIP PLASTIC FLOOR

(Use Key # 933 on Inquiry Card on page 75)

A NON-SKID plastic abrasive composition called Ferrox is now available for a wide range of floor safety applications. Made by American Abrasive Metals Company, the surfacing material provides low-cost coverage, 40 feet to the gallon. It is applied easily and quickly with a trowel directly from the can. It provides a non-slip grip, and resists oil, chemicals and weather conditions. Especially suitable for concrete floors in washrooms, ramps, platforms, around machine areas or wherever there is a slipping hazard.



CAM ACTION LOADBINDER

(Use Key # 934 on Inquiry Card on page 75)

TEXAS FOUNDRIES has announced a new series of "E-Z Pull" loadbinders featuring a patented cam action. Pull-down to lock position is said to be so easy that cheater bars are usually unnecessary, and dangerous handle snapdown is eliminated. Cam action eliminates slack-off when handle is pulled down and locked. Patented design also permits use of loadbinder around curves or square corners without slack-off. Safety features include elimination of dangerous kick-back when handle is released. Available in 12 different models.

FIRE-CLOSING DRUM COVER

(Use Key # 935 on Inquiry Card on page 75)

BY TIGHTENING the wing nut of the band attached to the Protectoseal Thermo-Acting Drum Cover any used 55- or 30-gallon steel drum or standard corrugated trash can is made into a large-size fire preventive container. The cover makes the unit a fire-safe receptacle for oily rags or swabs, oil soaked work clothing, paints, solvents, excelsior, packing materials, waste paper and similar combustibles.

The drum cover is a sturdy steel stamping, painted red, which fits firmly over the edge of the cover or can. Normally the cover stands open for convenient receiving of waste materials and is held in this position by a spring plunger unit which contains a low melting point fusible link. Should fire occur within the drum, the fusible link melts, releases the spring-loaded plunger which closes the cover and the fire within the drum snuffs out from lack of air. Surrounding fire will also actuate the link and close the cover. Melted links can be easily replaced. A thermo-closing pail cover can also be supplied to give the same protection to any 11-inch diameter used pail.

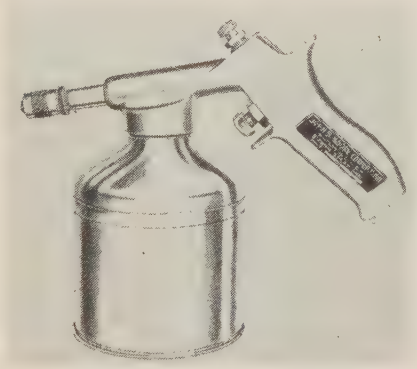
MEDICATION FOR CHEMICAL BURNS

(Use Key # 936 on Inquiry Card on page 75)

A NEW PRODUCT, called "Neutralize," has been introduced by the E. D. Bullard Company, which may be safely used to counteract both acid and alkali burns to the eyes or skin. The product is simply poured into the eyes or over the skin to render the chemical neutral, and therefore, harmless. It is said to counteract both acids and alkalies without inducing new complications.

Water, frequently used to dilute the acid or alkali, is not completely satisfactory. It will wash off some of the chemical but has no effect on the quantities that remain.

"Neutralize" has a pH of 7. Because it is neutral in action, it can be employed safely in high concentrations. It is available in 4- and 32-ounce polyethylene bottles.

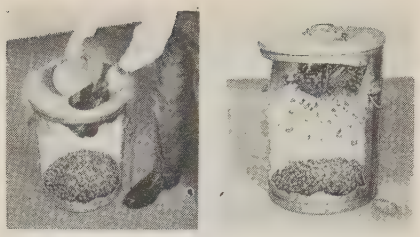


LOW PRESSURE SPRAY GUN

(Use Key # 937 on Inquiry Card on page 75)

THE NEWEST addition to the spray equipment group offered by the John B. Moore Corp. is the Model P-300, an air-operated siphon paint spray gun. It is designed to operate on air pressure as low as 5 lbs. psi, is light in weight, and draws from a one quart cup.

These features of the new model permit its use for stripe painting, touch-up work, stencil ink spray, application of silicone mold release oils, and application of metal surface corrosion inhibitors.

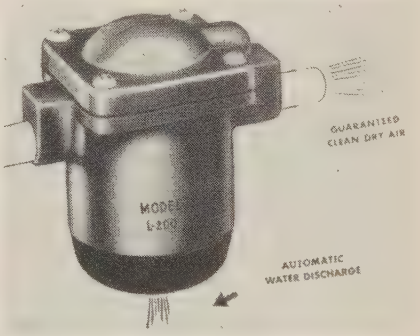


BOTTLE BREAKER

(Use Key # 938 on Inquiry Card on page 75)

FRANK-DANE, INC. has recently announced the development of the Safeway Bottle Breaker. This device is a combination of two components: a trip-hammer bottle destroying unit and a selection of disposal containers available for commercial, industrial, institutional, and domestic uses. The equipment prevents accidents commonly caused by flying glass, and reduces the cost of scrap-glass collection.

It is said to prevent the illegal refilling of alcoholic beverage bottles; eliminate bottles with traces of poisonous contents; prevent disease through the destruction of bottles that would attract germ-laden insects and rodents. The operation of this unit is reported to be completely accident-proof: the safety door of the unit is opened, and the bottle placed in the rack; the door is allowed to snap shut, which trips the trigger and releases the hammer. The bottle is pulverized, but only after the safety door has been closed completely.



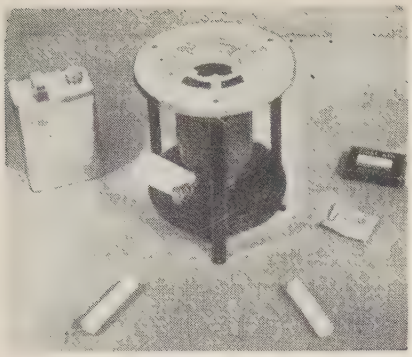
AUTOMATIC AIRLINE FILTER

(Use Key # 939 on Inquiry Card on page 75)

THE ENGMAN MFG. CO., EMCO Pneumatic Division, has announced the availability of a new fully automatic air filter. The compact unit which weighs only 28 ounces is equipped with an automatic discharge which eliminates hand draining.

The manufacturers say it prevents water, oil, grit, scale and sludge from entering tires and air-operated tools and equipment; that it guarantees clean, dry air. The development may be of special importance to the automotive industry, where the delivery of clean, moisture-free, oil-free air for tubeless tires is necessary.

As the air flows through the unit, water and other substances collect in the main filter chamber of the unit. Upon the sudden stoppage of the air flow, an internal valve permits the full line pressure to purge the collected water and foreign substances through the bottom opening. The unit operates on air pressure from 20 pounds to 175 pounds. Normally, no maintenance is required.



SURVIVAL KIT

(Use Key # 940 on Inquiry Card on page 75)

A SALVATION KIT, designed for use in emergencies such as air raids, floods, tornados, hurricanes, etc., is a new product of the Perfection Stove Co. The self-contained unit which can be used anywhere, at any time, consists of a portable all-metal kerosene stove, a sealed one-gallon tin of fuel, a first aid kit, safety matches sealed in a water-proof envelope and two extra-sturdy, heat-resistant 7-hour candles. The stove will operate up to 43.5 hours on a gallon of fuel.

The entire kit is sealed in a waterproof, moisture-proof box so that it may be stored for long periods without damage to any of its components and to protect it against flood waters or heavy down-pour. It provides a means of cooking and warming heat, fire, light and first aid remedies. It also has its value in the event of power failures, pending restoration of service.

SAFETY HOOK

(Use Key # 941 on Inquiry Card on page 75)

FOOL PROOF, positive locking Newco Safety Hook eliminates the human element of error, according to the Newman Mfg. & Sales Co. A load cannot be lifted without the gate or yoke automatically locking. To open, the hook must be manually pressed against a compression spring. The eye hook is standard strength and drop forged by leading hook manufacturers. The yoke or gate is made of manganese bronze alloy (110,000 P.S.I.), and prevents hook from spreading when overloaded. The smooth design of the safety hook allows full throat opening and also keeps the hook from catching on projections or ledges.

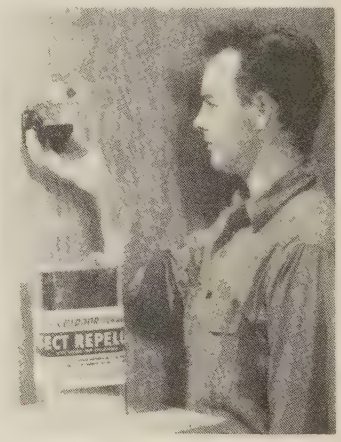
ONE-COAT FIRE RETARDANT PAINT

(Use Key # 942 on Inquiry Card on page 75)

A NEW "one-coat system" that combines maintenance painting with effective fire prevention has recently been announced by Albi Manufacturing Co. Application of one coat of Albi Fire Retardant Paint provides fire protection that meets Underwriters Laboratories' standards.

The paints can be applied by ordinary brush spray or roller methods to any type of surface: wood, steel, acoustical tile, fibreboard, etc. When fire strikes the Albi-coated surface, the paint puffs into a thick, cellular mat that not only resists the flame but insulates the surface effectively from the passage of the intense heat.

When the blaze is extinguished, the black "mat" is easily scraped off, revealing the undamaged surface ready for repainting with Albi coatings in one of a variety of colors.



INSECT REPELLENT

(Use Key # 943 on Inquiry Card on page 75)

"6–12" INSECT REPELLENT is now available in gallon containers for industrial use. It can be used in handy liquid dispensers placed at strategic locations convenient to outdoor workers.

The insect repellent, a product of Carbide and Carbon Chemicals Company, a Division of Union Carbide and Carbon Corporation, safely and effectively stops mosquitoes, chiggers, black flies, and gnats from biting. Accidents due to the distraction of workers from their jobs and infections resulting from bites are cut down.

This colorless, oderless liquid is applied simply by smoothing it on the skin. In warm weather, when perspiration is likely to be excessive, "6–12" will remain effective because of its limited solubility and low volatility.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the opposite page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it on the Inquiry Card.

Key Number	Subject
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti Fogging Equipment
104	Sweatbands
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protective Clothing
109	Safety Belts
110	Safety Gloves
111	Safety Toe Shoes
112	Safety Boots
113	Wooden Sole Shoes
114	Anti-Slip Soles
115	Oil-Proof Soles
116	Welding Helmets
117	Welding Curtains
118	Protective Skin Creams
119	Skin Cleansers & Soaps
121	Sanitary Drinking Cups
122	Athlete's Foot Control
123	Salt Tablets
124	Noise Control
125	Antiseptic Medication
126	Burn Medication
127	First Aid Kits & Supplies
128	Stretchers & Litters
129	Resuscitators
130	Portable Ventilators

Key Number	Subject
131	Dust & Fume Collectors
132	Carbon Monoxide Control
133	Fire Extinguishers
134	Safety Cans
134A	Extinguishing Ash Trays
135	Furnace Safety Devices
136	Alarms & Warning Lights
137	Safer Solvents
138	Flammable Liquid Pumps
139	Explosion-Proof Lights
140	Electrical Insulation Testers
141	Anti-Slip Flooring & Steps
142	Anti-Slip Waxes & Finishes
143	Floor Cleaning Products
144	Floor Machine Equipment
145	Oil & Grease Absorbents
146	Paints
147	Ladders & Safety Devices
148	Scaffolds
149	Work Platforms
150	Fluorescent Lamp Guards
151	Machine Guards
152	Power Press Feeders
153	Safety Signs
154	Aisle Marking Equipment
155	Safety Awards & Emblems
156	Employee Safety Guide
157	Hand Tools

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

WASHROOM PRODUCTS

Heavy Duty Liquid Skin Cleaner. 299
Scriptoil Laboratories. This illustrated bulletin describes a liquid hand cleaner containing no abrasive, solvents, alkali, soap or alcohol. Suitable for removing oil, tar, paint and petroleum products as well as ordinary grime, it is said to be helpful in preventing dermatitis.

Self-Closing Waste Can 300
Solar-Sturges. Small folder describes a new attractively styled waste receptacle for washrooms, lunch areas, corridors, etc. The self-closing center-mounted dome permits use of the can from any angle.

PERSONAL PROTECTION

Hard Hats 301
Mine Safety Appliances Co. A complete line of protective helmets for workers, miners and fire-fighters is shown in this well illustrated 16-page brochure. Includes hats and caps of reinforced and high-pressure plastic, glass fiber and aluminum, and in combination with face shields and welding helmets.

Non-Slip Sole Shoes 302
Charles Chester Shoe Co. Illustrated folder describes a work shoe with the Tri-Vac flight deck sole for painters, aircraft workers, roofers and others working where non-slip security is essential. Pictures show the concentric vacuum circle design of the sole and the steel midsole to protect the foot from puncture hazards.

Safety Equipment Catalog 303
Graton & Knight Co. This illustrated catalog will be of interest to all industries using hand guards, aprons, tool holsters and other equipment made of protective leather. Available in 7 different tannages for various conditions. Also includes data on a belt dressing than can be applied in spray form.

ELECTRICAL EQUIPMENT

Automatic Emergency Lighting Units 304
Electric Cord Co. This 15-page catalog offers a complete line of automatic emergency lighting units which are plugged into regular circuits, automatically switch to wet cell battery power when service fails, and automatically recharge. Also shown are units with "Exit" and other signs, nickel cadmium battery systems, dry cell automatic lights and flashing lights, and fluorescent lamp guards. Catalog is especially informative in uses for various types of products.

Wiring Devices 305
Rodale Mfg. Co. This 48-page catalog covers more than 600 items of electrical and lighting equipment for both industry and the home, including wiring connectors and caps, receptacles, extension cords, power blocks, lamps, etc.

LADDERS

Ladder Catalog 306
Goshen Mfg. Co. New, well-illustrated 22-page catalog shows a wide range of wooden ladders, scaffolds, and accessory equipment such as ladder shoes, brackets, roof hooks, etc. Includes detailed descriptions on safety construction and design features. Many units are listed by UL.

Ladders & Tools 307
Newark Ladder & Bracket Co., Inc. An extensive line of wooden and aluminum ladders are illustrated and briefly described in this bulletin, which also includes scaffolds, boatswain's chairs and a variety of tools and devices used by painters, carpenters and maintenance crews.

FLOOR MATERIALS & MAINTENANCE

Anti-Slip Floor Wax 308
E. I. DuPont de Nemours & Co., Inc. This informative bulletin is designed to give the facts about a water-repellent, no-buff safety floor wax. Interesting question and answer format gives data on the wax and its ingredients; need for it; its characteristics, uses and application; and how to purchase it.

Aluminum & Steel Grating 309
Blaw-Knox Equipment Div. A new bulletin describes the types, sizes and load characteristics of the complete line of electro-forged steel and interlocked grating. Excellent illustrations show uses for flooring, stair treads, platforms for in-plant and outside areas.

Grout Estimating Card 310
The Master Builders Co. A handy pocket-size card for estimating grout requirements of heavy equipment, machinery, anchor bolts, building columns, etc. Designed for contractors, engineers, and maintenance personnel, card also includes packaging and storing information on pre-mixed grout.

Resurfacing Materials 311
Maintenance, Inc. Ready-to-use granulated compounds of hard aggregates and processed asphalts for the resurfacing and repair of floors in factories, offices, schools, hospitals, etc. are described and illustrated in this folder. Data given on three different grades of the material.

Steel Grating Materials 312
Klemp Metal Grating Corp. A 16-page data and specification manual covers all types of open steel floor grating, stair treads, vessel liners, bridge decking, floor armor and drain grates. Contains safe load tables, panel width constant charts, types of anchors, and uses of grating in industry, oil, chemicals, safety, transportation, etc.

Floor Maintenance Machine 313
American Floor Surfacing Machine Co. A versatile floor machine is concisely described and well illustrated in this 8-page brochure, which points out that a single machine can

(Continued on next page)

SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE.

READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

ADVERTISED PRODUCTS: Just insert the key number shown under each advertisement in the boxes below.

NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item.

FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

June, 1955 **Please send me the following free data (Remember to fill in your name and addres**

PLEASE PRINT

Name _____ Title _____

Company Name _____

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MAIL POSTAGE PAID CARD FOR MORE DATA

Free Bulletins (Cont'd)

scrub, polish, wax, buff, steel wool, disc sand, shampoo rugs (wet or dry), grind concrete, and polish terrazzo.

Heavy-Duty Industrial Sweeper.. 314
Industrial Sweeper Co. A motorized, driver-ride type of industrial sweeper suitable for both in-plant and yard use is covered in this 4-page bulletin. Gives full construction features and shows applications of the three-brush unit.

NOISE CONTROL

Audiometric Testing Room 315
Burgess-Manning Co. Illustrated bulletin gives details on a pre-fabricated sound-proof booth for testing employee hearing. Room includes desk, light, window and ventilation equipment.

Acoustical Plastic 316
Vermiculite Institute. New booklet covers vermiculite acoustical plastic and its application. Contains table of physical data, standard specifications for manual and machine application, and diagrams of two constructions with 4-hour fire ratings.

MISCELLANEOUS

Carbide Tip Safety Saw 317
W. F. Meyers Co., Inc. This bulletin gives full data on a carbide tipped circular saw of the cut-control design, which offers greater safety through its non-kick-back and non-hand-pulling features.

Safety Signs 318
Stonehouse Signs, Inc. Well illustrated folder in full color offers a variety of No Admittance, Keep Away, and Danger signs, made in accordance with ASA specifications. Includes prices and full data.

Decontamination Coating 319
R. M. Hollingshead Corp. A sprayable vinyl plastic coating which can be applied to smooth or irregular surfaces in laboratories and installations exposed to Beta radiation is described in this technical bulletin. The coating can be stripped off for decontamination of the surface.

Street & Yard Marking Equipment 320
Sargent-Sowell, Inc. This 4-page bulletin offers full data on a variety of marking devices and equipment to promote safety on highways or in parking lots. Includes traffic cones, paint marking machines, street stencils, marking buttons, embossed letters, and street signs.

Mercury Vapor Detector 321
Harold Kruger Instruments. A new folder describes a line of mercury vapor meters for detecting toxic concentrations in plants and laboratories. Gives data on type of meter to use beyond toxic limit, detecting source of contamination, and sounding alarm.

Industrial Bleachers 322
American Welding & Mfg. Co. Many plants lack adequate facilities for seating of employees during safety meetings. This bulletin describes a portable bleacher that can be folded into a compact unit for storage and opened into a tier of seats when needed.

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BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 6634, SEC. 34.9 P. L. & R., NEW YORK, N. Y.

"SAFETY MAINTENANCE & PRODUCTION"
ALFRED M. BEST COMPANY, INC.
75 FULTON STREET
NEW YORK 38, N. Y.

ervice Dept.

READERS FREE
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for further data
on
ADVERTISED PRODUCTS,
NEW PRODUCTS,
FREE BULLETINS & CATALOGS

CESCO

RIGHT... before your Eyes!

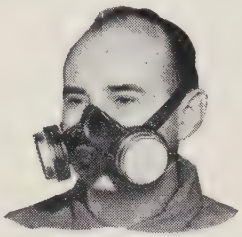
Lite-Specs

Cup-type Goggles

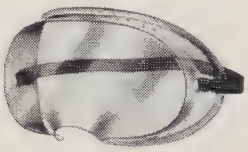
Spectacle-type Goggles

Plastic Frame Goggles

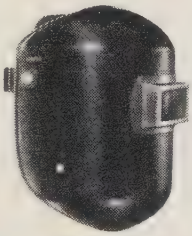
Cover Goggles



Approved Respirators



Coverlite Goggles



Fibre Glass Helmet

Approved Respirator Hood

Face Shields

WHERE TO BUY IT

ATLANTA, GA.
Guardian Safety Equipment Co.
427½ Moreland Avenue, N. E.

BIRMINGHAM, ALA.
"L. P." Harless Company
2627 Seventh Avenue, South

BOSTON, MASS.
General Equipment Corporation
261 Franklin Street

BUFFALO, N. Y.
The Watson Company
1443 Main Street

CHICAGO, ILL.
Universal Safety Equipment Co.
5115 Diversey

CINCINNATI, OHIO
Williams & Co., Inc.
3231 Fredonia Avenue

CLEVELAND, OHIO
Williams & Co., Inc.
3700 Perkins Avenue

COLUMBUS, OHIO
Williams & Co., Inc.
851 Williams Avenue

DALLAS, TEXAS
Guardian Safety Equipment Co.
900 Jefferson Tower Bldg.

DETROIT, MICH.
Averill Equipment Company
19225 Conant Avenue

HOUSTON, TEXAS
Guardian Safety Equipment Co.
1915 A Westheimer

INDIANAPOLIS, IND.
Averill Equipment Company
1917 North Goodlett

KANSAS CITY, MO.
Safety, Incorporated
17 E. 31st Street

KNOXVILLE, TENN.
Safety Equipment Distributing Co.
832 W. Main Street

LITTLE ROCK, ARK.
Fire Appliance & Safety Co.
1114 W. Markham

LOS ANGELES, CALIF.
Guardian Safety Equipment Co.
7223 S. Main Street

LOUISVILLE, KENTUCKY
Williams & Co., Inc.
1109 S. Preston Street

MILWAUKEE, WIS.
Universal Safety Equipment Co.
3155 S. 7th Street

ORANGE, N. J
Guardian Safety Equipment Co.
400 S. Jefferson Street

PEORIA, ILL.
Universal Safety Equipment Co.
116 S. Garfield

PHILADELPHIA, PA.
Guardian Safety Equipment Co.
214 S. 45th Street

PITTSBURGH, PA.
Williams & Co., Inc.
901 Pennsylvania Avenue

ST. LOUIS, MO.
Safety, Inc.
2608 Olive Street

ST. PAUL, MINN.
Continental Safety Equipment, Inc.
1551 Selby Ave.

SALT LAKE CITY, UTAH
Universal Fire & Safety
Equipment Co., Box 1587

SAN FRANCISCO, CALIF.
Guardian Safety Equipment Co.
50 Hawthorne Street

SPOKANE, WASH.
Spokane Safety Appliances
W. 314 Pacific Ave.

TOLEDO, OHIO
Williams & Co., Inc.
946 Kane Street

TULSA, OKLA.
Guardian Safety Equipment Co.
1742 S. Main Street

WICHITA, KANS.
Guardian Safety Equipment Co.
723 S. Broadway

MEXICO CITY, D. F.
Safety Equipment S. A.
Sullivan—95

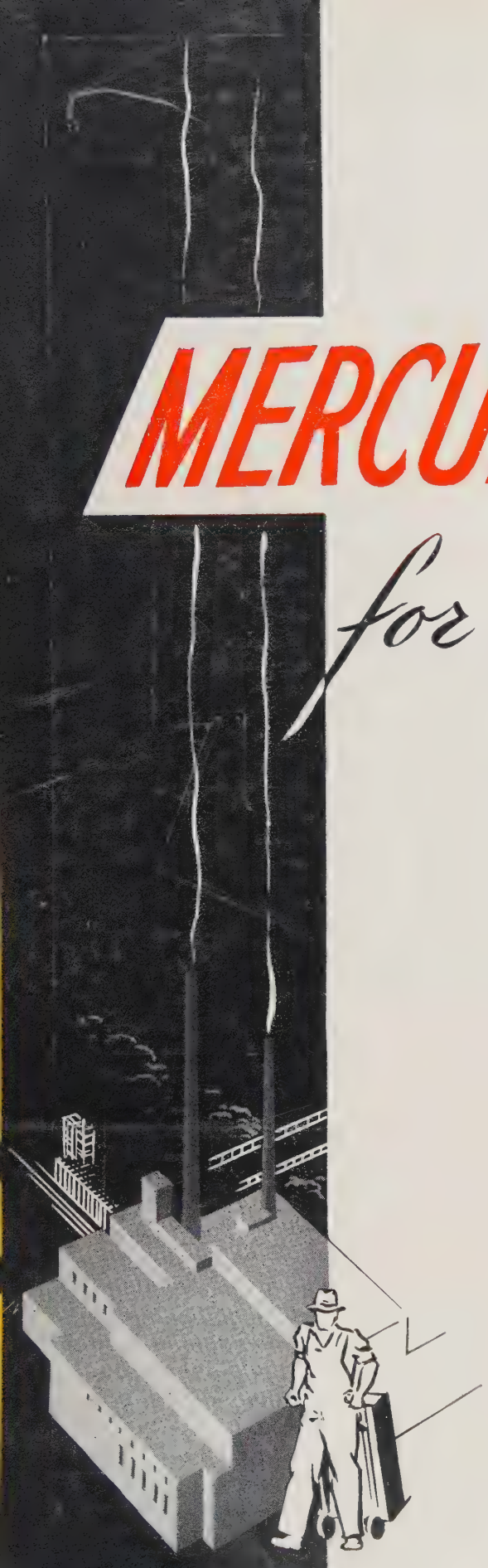
MONTREAL, CANADA
The Butler Optical Company, Ltd.
1520 Mountain Street

CHICAGO EYE SHIELD COMPANY • 2310 Warren Boulevard, Chicago 12, Illinois

CESCO

CESCO FOR SAFETY

(For details, use Key # F-38 on card on page 75)



MERCUROCHROME®

for first Aid

Neglect may cause infection, which can be prevented by prompt use of Mercurochrome.

No antiseptic has been proved to be more effective than Mercurochrome.

Thirty-four years of extensive clinical and lay use has proved the value of this popular antiseptic.

Thantis LOZENGES

First aid for throat irritations...

Thantis Lozenges relieve pain promptly—reduce infection—act prophylactically.

Sore throats due to coughs and colds, if neglected, may result in lost man hours of work.

HYNSON, WESTCOTT & DUNNING, INC., BALTIMORE 1, MARYLAND

(For details, use Key # F-39 on card on page 75)

KANSAS CITY, MO.
PUBLIC LIBRARY
JUL 11 1955

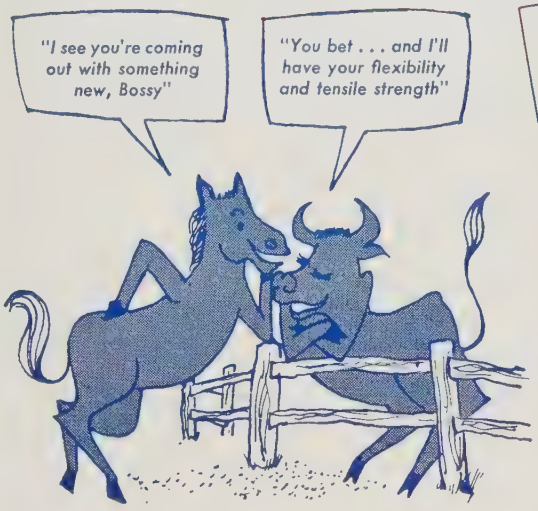
Safety Maintenance

and Production

ST. 1901: AMERICA'S PIONEER MAGAZINE IN ITS FIELD • JULY, 1955 • 50 CENT

Hand Protection

Announcing the NEW AO "DREDNAUT" line of COWHIDE GLOVES



They're SPECIALLY TANNED

- **You get the Flexibility of Horsehide**
- **You get the Tensile Strength of Horsehide**
- **You get the Heat Resistance of Horsehide**
- **And . . . you get the Abrasive Resistance (Longer Wear) of Cowhide**

The "Drednaut" line consists of 6 heavy duty, specially chrome-tanned side-split cowhide gloves styled and tailored with typical AO know-how of what welders want and need. What's more, these gloves are priced to move!

For hot weather, hot job comfort . . . keep production up with AO Sweatbands.

LOOK FOR THE AO "Drednaut" and the light green shade. Your nearest AO Safety Products Representative can supply you.

†T. M. REG. BY AMERICAN OPTICAL COMPANY

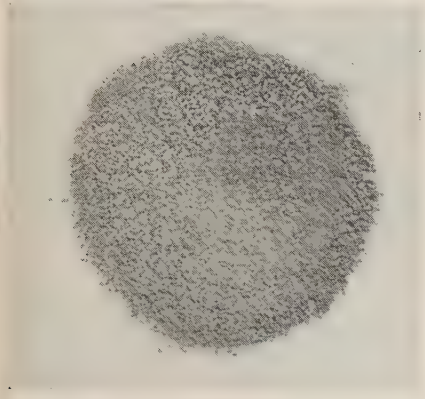
American Optical
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For details, use Key # G-1 on card on page 55)

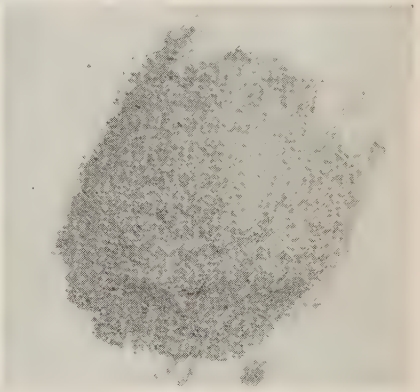
ZORBALL—
BEFORE TEST

COMPETITIVE
ABSORBENT—
BEFORE TEST



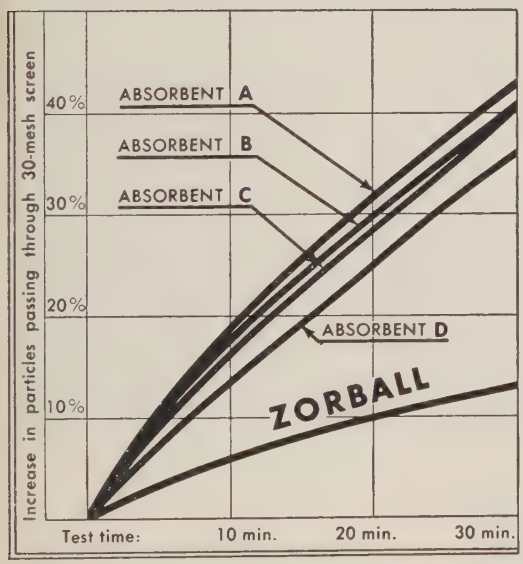
ZORBALL—
AFTER TEST

COMPETITIVE
ABSORBENT—
AFTER TEST



Laboratory abrasion and crush test made on ZORBALL and competitive floor absorbent. *Top:* Both look very much alike when new. *Bottom:* But after 30-minute test, see the difference! ZORBALL is still granular, skidproof. Competitive absorbent is a powdered dust!

Crush tests prove Zorball Floor Absorbent resists breakdown longer, keeps floors safer!



Graph of abrasion-crush tests using ZORBALL and four other leading floor absorbents. Curved lines show rate of breakdown, prove ZORBALL stands up best under severe punishment!

Here's dramatic proof that Wyandotte ZORBALL is the safest, lowest use-cost floor absorbent you can buy . . . a laboratory test that duplicates the crushing that absorbents actually receive "on the job."

ZORBALL is safest, because its rugged, *angular* particles resist breakdown. ZORBALL is nonflammable; absorbs oil, grease, water, paint, ink, and chemicals. ZORBALL retains its anti-skid properties under heavy traffic or extremely wet conditions without mudding, caking, or dusting. ZORBALL lasts longer, goes farther, costs less to use!

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(For details, use Key # G-2 on card on page 55)

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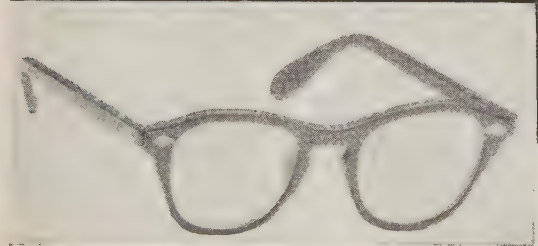

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formerly "Safety Engineering"

Volume 110, Number 1 **July 1955**

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SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

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WHY THE DEBATE?

THE RELATIVE MERITS of mechanical safeguards and discipline is a subject that has been debated almost as long as the query to determine whether the egg or chicken came first.

Safety leaders or production officials will roar from the housetops that mechanical safeguards provided by management will solve the accident problem everywhere. Proponents of education, or discipline when necessary, will be just as vehement that the best safety device is the mind of man.

It would seem to us that any debate on the subject or, for that matter, even the slightest difference of opinions is completely futile. It should brook no argument because both are tools of safety. The finest guard yet devised will accomplish very little until it is put to use.

Equally important, is the fact that the most disciplined and best educated operator is a human being, first of all, and therefore subject to all the frailties known to mankind since the beginning of history. That being so the well-adjusted, educated or disciplined employee can be subject to serious injury in any danger zone unless he is surrounded by mechanical safeguards whether it be a punch-press guard, a pair of goggles or a respirator.

As one safety expert pointed out at a regional safety conference, we have seen that a sign reading "wet paint" can draw an exploratory finger to any object as quickly as a magnet attracts metal. If the painted object were in a hazardous area, the one sure way to keep the curious away is to erect a barricade to prevent reaching. Isn't that barricade, then, a form of mechanical safeguard?

Obviously, guarding in any form is a positive approach to preventing the loss of life and limb in any industrial operation.

Various safeguards for accident control have been in use since the turn of the century and some form of guarding has been in existence since civilization began.

Progressive management long ago recognized the need for safety equipment and devices to stem the tide of accidents. This half-century crusade is a never-ending challenge to designers, operating executives and the man at the bench.

By the same token, how can we question the efficacy of education, instruction and even discipline as a vital factor in accident prevention? A machine guard lying on a bench, a pair of goggles worn around the neck or safety shoes in a box on the shelf never yet prevented an accident.

In the last analysis, we need both mechanical aids and appeal to reason if we are to accomplish further goals on the road to safety.

There is no room for debate here . . . one without the other is merely a job half done and safety is no half-measure project. H. A.

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(For details, use Key # G-4 on card on page 55)

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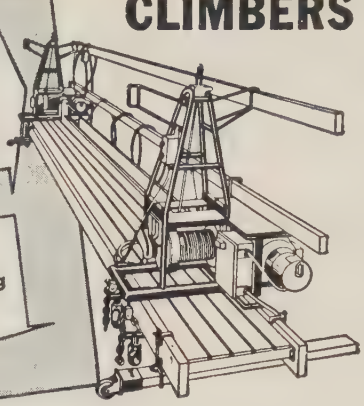

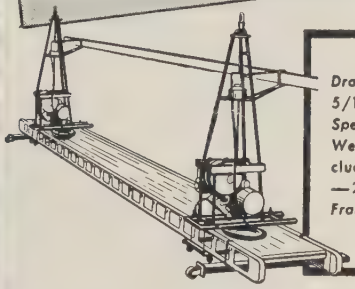

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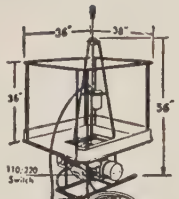

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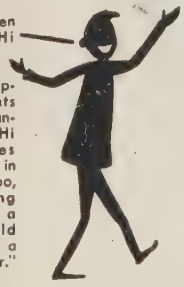
(For details, use Key # G-5 on card on page 55)

SAFETY DIRECTORS RAVE ABOUT THEM
...(Safe-Hi Ladder Shoes We Mean!)

"Since we've been using Safe-Hi Ladder Shoes in our plant, our ladder slipping accidents have all but vanished. Safe-Hi Ladder Shoes save us money in other ways, too, by eliminating the need for a helper to hold the base of a worker's ladder."



"Meets the Safety Color Code."

"The ladder shoe that is approved by Underwriters Laboratories for ALL surfaces."

"Safe-Hi Ladder Shoes contain the essential combination of cord, neoprene and straight ridges in the tread ... enabling the shoes to hold on ALL surfaces, (greasy, wet, dry). There's a self sharpening spike for snow and ice, too.

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2700 W. Barberry Place
DENVER, COLORADO

Safe-Hi DENVER

(For details, use Key # G-6 on card on page 55)

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LEON SWIRBUL

Portrait by Fabian Bachrach

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"At Grumman, we are proud that in our person-to-person campaign over 10,000 employees joined the Payroll Savings Plan and grasped the opportunity to buy U. S. Savings Bonds regularly every payday. These results were achieved through enthusiastic, patriotic teamwork. I urge every American company to reactivate their Bond Program now in a nationwide effort to maintain sound money and a stable economy."

LEON SWIRBUL, ***President, Grumman Aircraft Engineering Company***

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(For details, use Key # G-7 on card on page 55)

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THE FUTURE SHOWS

Los Angeles, Calif. *July 12–14*

Second Western Plant Maintenance & Engineering Show (Pan Pacific Auditorium). Clapp & Poliak, Inc., exposition management, 759 Monadnock Bldg., San Francisco 5, Calif.

Cleveland, Ohio *Sept. 13–15*

Seventeenth Annual Ohio State Safety Conference and Exhibit (Hotel Carter). Michael L. Stefani, General Manager, Cleveland Safety Council, 2073 E. 9th St., Cleveland 15, Ohio.

York Harbor, Me. *September 15–16*

Twenty-eighth Annual Maine State Safety Conference (Marshall House). Arthur F. Minchin, Secretary, Department of Labor & Industry, State House, Augusta, Me.

Chicago, Ill. *Oct. 17–21*

Forty-third National Safety Congress and Exposition (Conrad Hilton and other hotels). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Charleston, S. C. *November 3–4*

Eighteenth Annual South Carolina Accident Prevention Conference (Francis Marion Hotel). J. Donald Watson, Jr., Secretary-Treasurer, P. O. Box 539, Columbia, S. C.

Kansas City, Mo. *November 14–18*

Eighty-third Annual Meeting of the American Public Health Association and related organizations (Municipal Auditorium). Dr. Reginald M. Atwater, executive secretary, American Public Health Association, Inc., 1790 Broadway, New York 19, N. Y.

Washington, D. C. *May 14–16*

President's Conference on Occupational Safety.

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what safety and maintenance products to use

when to use them

who makes them

where to buy them

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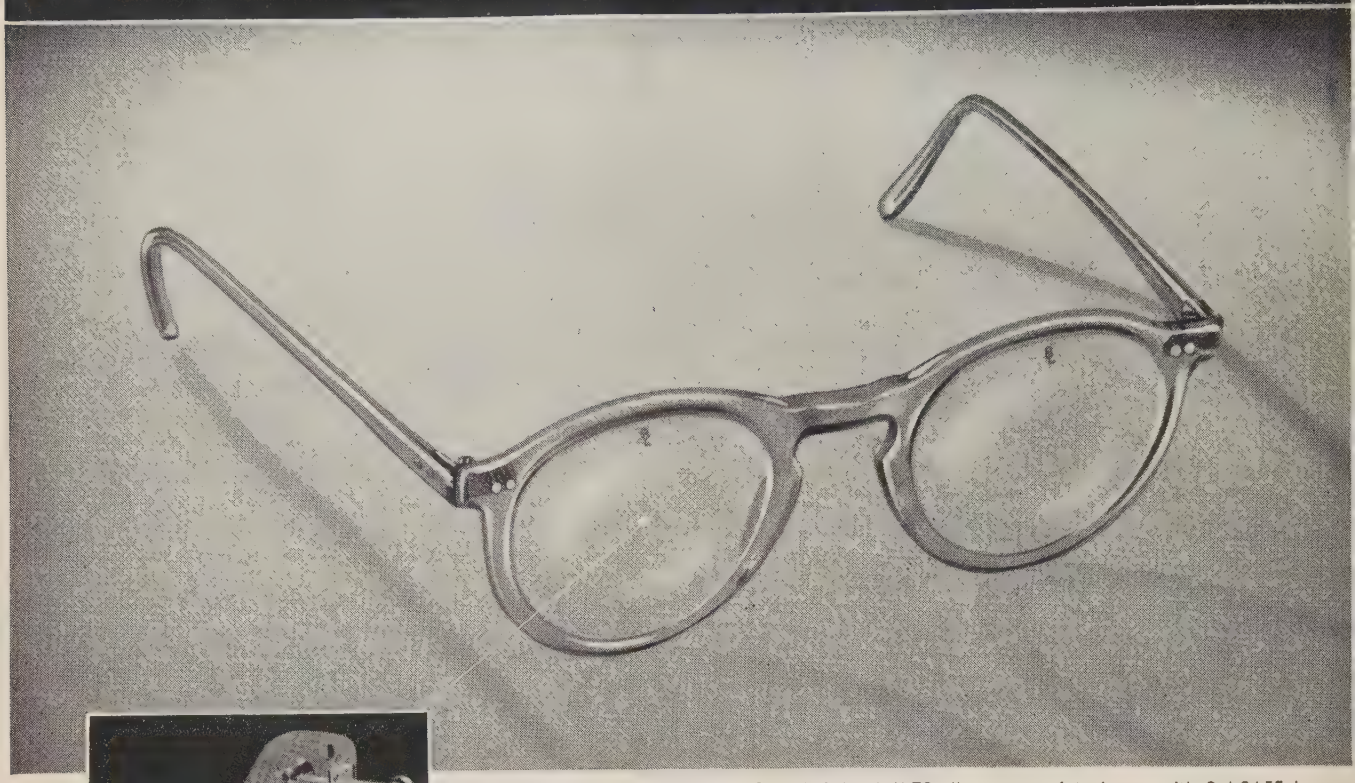
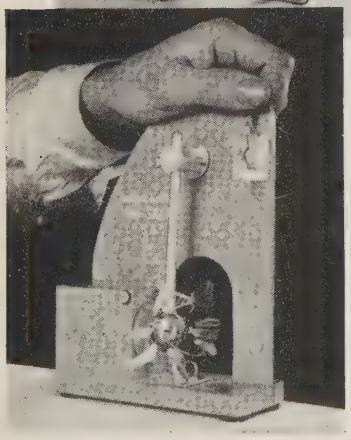


Bausch & Lomb Y-70 all-acetate safety frame with Bal-SAFE lenses.



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Now available

New Bal-SAFE Lens Impact Tester is ideal for demonstration at employee safety sessions. Hammer hits lens with force of ⅞" dia. steel ball dropped 50 inches. Bottom photo shows how unhardened lens is shattered. For price, ask your B&L Industrial Vision representative.

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SINCE 1853

Just mail this coupon with your business letterhead to get your free copy of "Complete Eye Protection."

BAUSCH & LOMB OPTICAL COMPANY
90543 Smith St., Rochester 2, N. Y.

(For details, use Key # G-9 on card on page 55)

Official locks door of test house before explosion, just as anyone might when leaving home on warning of enemy attack.

Officials examine damage to concrete house after explosion.

Two Houses Stand A Nuclear Blast

At 5:10 A.M., Pacific Daylight Saving Time, last May 5th a 35-kilo ton nuclear bomb (equivalent to 35 thousand tons of TNT) was exploded over the Nevada desert. A small city, differing from a normal town only in that it was inhabited by dummies, had been erected on the site of the explosion. The Federal Civil Defense Administration wanted to find out the effects of the blast on this—Survival City.

What They Found . . .

The following is a quotation from the official post shot release:

"The above ground portion of the 2-story brick and cinder block house located 4,700 feet from the explosion was almost completely destroyed, and the first floor was partially collapsed into the basement. None of the brick work remained standing, and the structure as a whole was beyond repair even for emergency shelter from the elements.

Showed Destruction . . .

The 1-story frame rambler located near the 2-story brick dwelling 4,700 feet from the explosion was likewise almost completely destroyed. Only the reinforced concrete bathroom shelter remained intact. Both the 1-story reinforced lightweight expanded shale concrete block house and the 1-story precast lightweight concrete house suffered only minor structural damage. These houses were also located 4,700 feet from the explosion. With the replacement of doors and window sash, both houses could be made habitable.

At 5,500 feet from the explosion the 2-story redesigned frame house suffered severe damage, and would not be suitable for occupancy without extensive major repairs which would hardly be economically advisable.

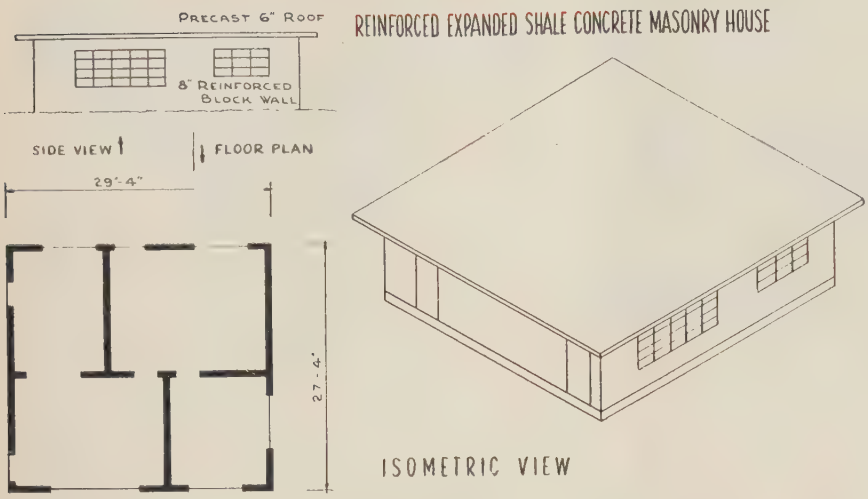
The 1-story precast light aggregate concrete house and the 1-story reinforced masonry block house, both located 10,500 feet from the explosion, suffered relatively minor damage. Only minor repairs would be required to make these dwellings suitable for reoccupancy.

The 1-story frame rambler, also located 10,500 feet from the explosion, suffered relatively heavy damage, but nevertheless could be restored to conditions suitable for occupancy at moderate costs."

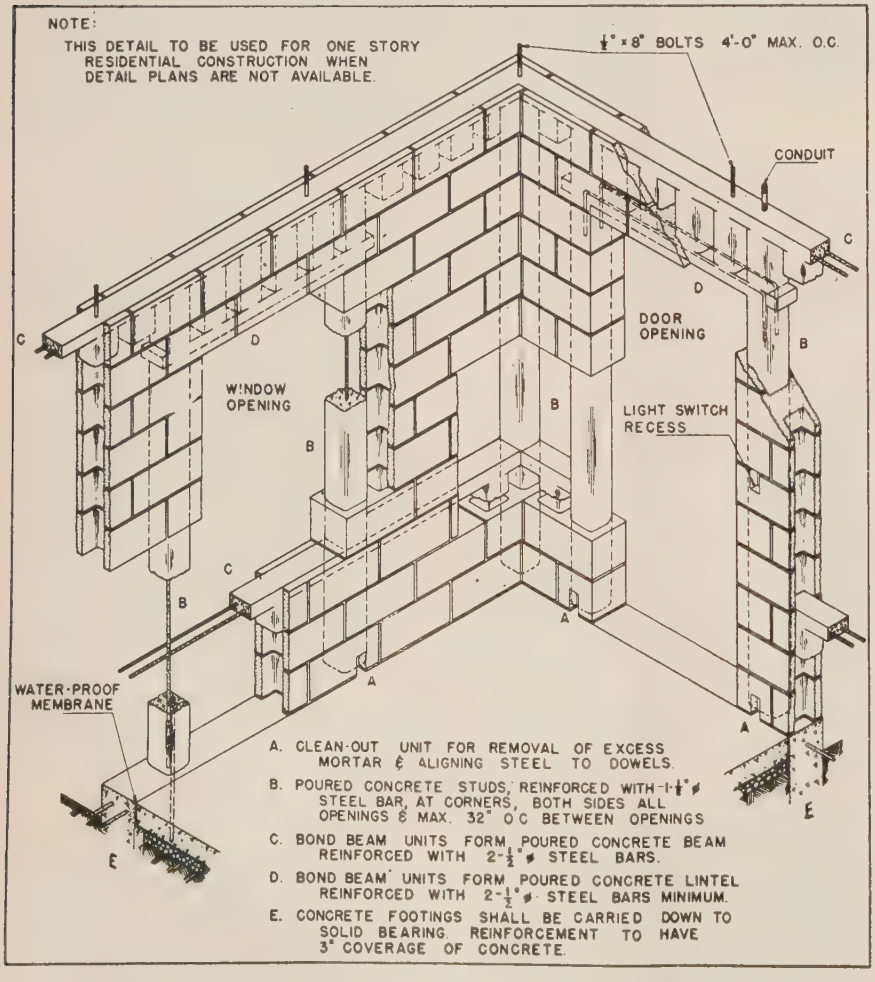
But Also Gave Hope . . .

This report of destruction shows some heartening results of construction survival. On Doomsday Drive, just 4,700 feet from where the nuclear bomb was detonated, 2 houses stood blast. *(Cont'd next page)*

This House Took It!. . . . . .



Reinforced expanded shale concrete masonry house shown in drawings above successfully withstood force of nuclear explosion. Though located only 4,700 feet from ground zero, only windows and doors, and (in some cases) door and window jambs were blown out. House itself remained structurally sound and unmoved ready for reoccupancy with a minimum of repairs needed. Duplicate of 1-story, 2-bedroom structure was erected at 10,500 feet and received even less damage. Design strengths were 1,000 P.S.I., gross area.


NOTE:
THIS DETAIL TO BE USED FOR ONE STORY RESIDENTIAL CONSTRUCTION WHEN DETAIL PLANS ARE NOT AVAILABLE.
½" × 8" BOLTS 4'-0" MAX. O.C.
CONDUIT
DOOR OPENING
WINDOW OPENING
LIGHT SWITCH RECESS
WATER-PROOF MEMBRANE
A. CLEAN-OUT UNIT FOR REMOVAL OF EXCESS MORTAR & ALIGNING STEEL TO DOWELS.
B. POURED CONCRETE STUDS, REINFORCED WITH 1-½"ø STEEL BAR, AT CORNERS, BOTH SIDES ALL OPENINGS & MAX. 32" O.C BETWEEN OPENINGS
C. BOND BEAM UNITS FORM POURED CONCRETE BEAM REINFORCED WITH 2-½"ø STEEL BARS.
D. BOND BEAM UNITS FORM POURED CONCRETE LINTEL REINFORCED WITH 2-½"ø STEEL BARS MINIMUM.
E. CONCRETE FOOTINGS SHALL BE CARRIED DOWN TO SOLID BEARING. REINFORCEMENT TO HAVE 3" COVERAGE OF CONCRETE.

Drawing above gives structural details of reinforced expanded shale concrete masonry house. Only evidence of walls cracking under force of nuclear explosion was slight cracking in mortar between concrete blocks. Roof remained intact in its original position.

Although window glass and exterior doors were completely blown out on these 2 surviving structures, the wall and roof construction effects were surprisingly small. Both the pre-cast concrete house and the concrete masonry block house, were of 1-story, 2-bedroom design. The details of these two dwellings were of standard construction, reinforced to comply with California earthquake requirements, and F.H.A. structural requirements. Both buildings contained pre-cast flat slab roofs made of reinforced expanded shale concrete. These roofs all remained intact and in their original locations.

Observation of the nuclear explosion effects to the reinforced lightweight expanded shale block structure indicated surprisingly little structural damage, with a minimum of repairs required. The connections appeared to be intact and sound and there was no evidence of misalignment or racking. Although the wooden exterior doors were completely blown off their frames, the metal door jambs and hinges were intact, ready for immediate replacement of doors. In only a few instances, were the steel window frames blown out. All window glass was completely broken and some cracking was observed in the walls facing the blast. This cracking was confined to the mortar joints, as there were no cracks through any of the expanded shale blocks. Two lower courses under the 10-foot window facing the blast, were forced in 2 inches at the center. However, visual inspection showed that reinforcing and studs were not installed, as intended by the designer.

When Concrete Held . . .

The lightweight expanded shale, pre-cast concrete residence also experienced minimum structural changes. Visual inspection indicated very little structural damage with minimum repairs required.

So Did This One!

Structural connections all appeared to be intact and sound. The outside wall of the garage indicated an outward bow deflection of 3-quarters of an inch at center, however, this was an exceptionally long wall structure. The door was blown into bits, into the garage interior. In a couple of instances, the steel window frames were blown out. All window glass was completely gone, and there was some hairline cracking on the wall facing the blast. These cracks did not exceed 1-sixteenth of an inch. Some spalling at welded connections was also observed, however, all welded connections remained intact. Results proved the house to have remained structurally sound.

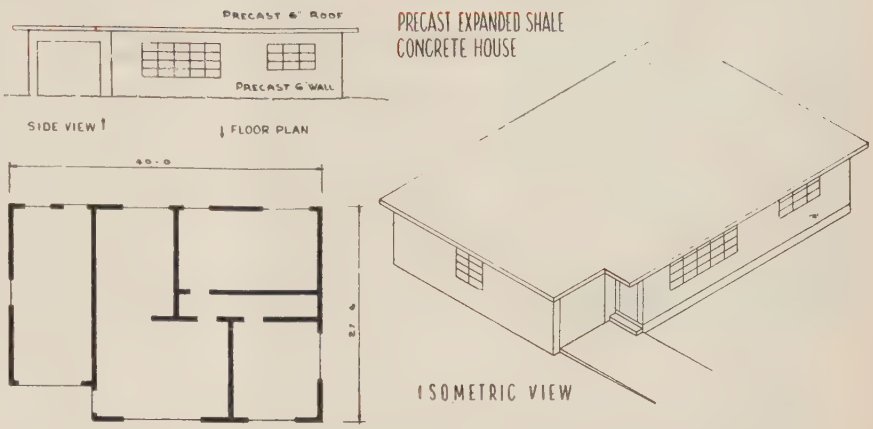
Exact replicas of these 2 houses were also constructed at 10,500 feet from ground zero. At this distance, both types of houses experienced far less damage than those at 4,700 feet. The glass on the blast sides were blown out and all exterior doors were also blown out.

Because of Construction Process

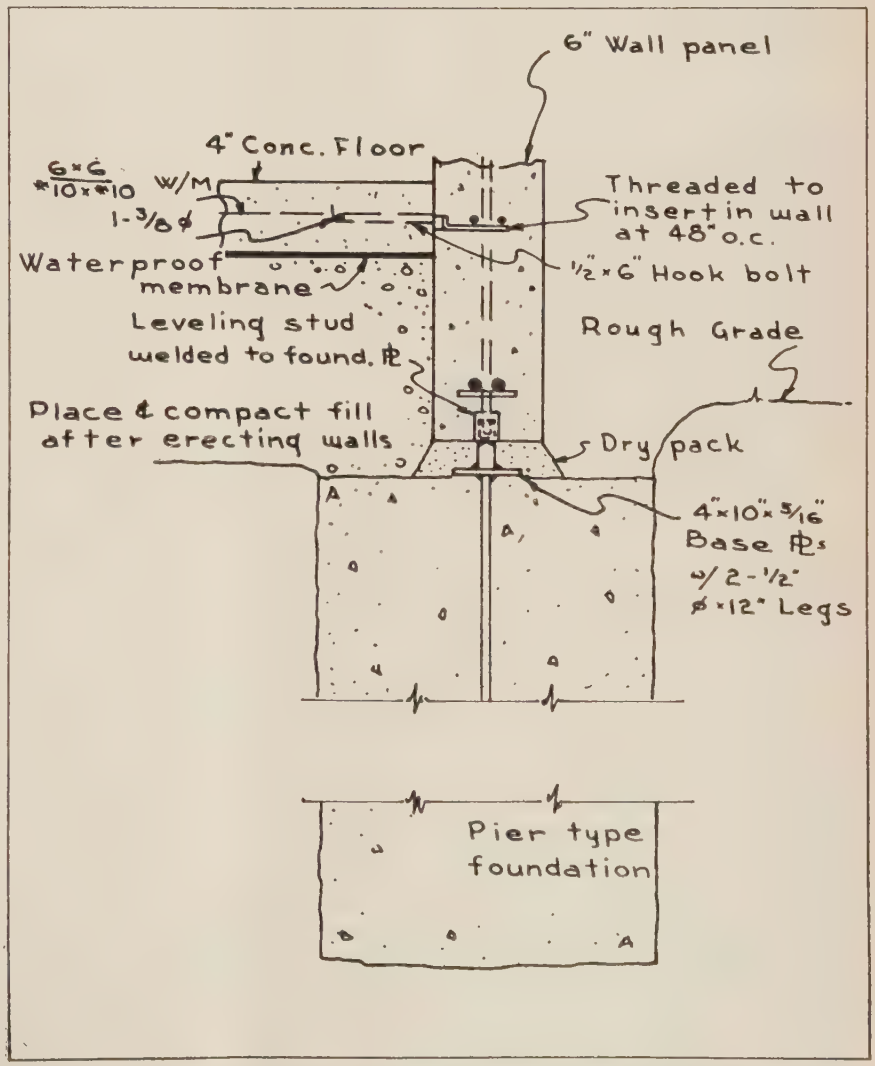
Both buildings utilized expanded shale aggregate in their construction features. The expanded shale aggregate is made by the rotary kiln method, which subjects raw shale to an expansion process. At a temperature of approximately 2,000° F., the shale expands or "bloats," resulting in a vesicular particle composed of minute, individual air cells. Minimum design strengths specified for concrete block units manufactured of this aggregate were 1,000 P.S.I., gross area. Actual compression tests indicated an average strength of 1,300 P.S.I., gross area. Minimum design strengths specified for pre-cast elements were 3,000 P.S.I. Actual average cylinder test results gave 3,200 P.S.I. strengths.

Results of the nuclear test seemed to point the way to possible building survival under nuclear bomb attack.

Data released in cooperation with the Federal Civil Defense Administration.



Precast expanded shale concrete house shown in drawings above also withstood force of blast, though it too was located only 4,700 feet from ground zero. Windows and doors were blown out and some spalling at welded connections was observed as well as hairline cracking on the wall facing the blast. Duplicate of this house was also erected at 10,500 feet from site of explosion and was damaged only slightly, losing window glass and doors.



Drawing above gives more structural details of precast expanded shale concrete house. The expanded shale concrete aggregate is made by subjecting raw shale to 2000° F., which causes it to bloat and produces a vesicular particle of minute, individual air cells.

LIGHTING & ELECTRICAL SERIES
more articles in August & September

5 Steps To

1. Define electrical safety as the protection of personnel, equipment, and materials . . . not just the protection of personnel alone.
2. Provide management with assurance of a good return on its investment in safety.
3. Establish a set of equipment specifications to be used on the installation of new equipment and the modification of existing equipment.
4. Provide a set of safe operating procedures.
5. Provide adequate, individualized safety training to all employees.

by **HAROLD E. VANN**

Safety Engineer
Safety Services
General Electric Co.

ELECTRICAL HAZARDS EXIST in all modern industrial plants. Controlling them is especially important since electrical accidents are more likely to be fatal than any other type of accident. The chances are that at least one of 5 persons injured by high voltage electric shocks will die, while a recent study showed that the overall death rate for industrial accidents is only one in 600!

Injury vs Death

If a machine operator violates the cardinal rule for punch press operation and gets his hand in the "pinch" area, he may lose a finger or his entire hand. If a person makes even the slightest contact with a high voltage electrical circuit, he is apt to lose his life. An employee in one industrial plant was electrocuted while repairing a resistance welding machine. He reached inside the frame to adjust the water hose connections and his hand accidentally touched a 575 volt stud on the selector switch. Investigation revealed that he had not removed power from the welder before trying to repair it. So simple a mistake was this that had anything but electricity been involved there would probably have been no accident.

The visual appearance of an electrical current carrying conductor gives little indication of the lethal power it contains, and the use of electricity is so widespread, that where safety is concerned, industry cannot be satisfied with halfway measures. It is essential that electrical hazards be recognized and that practical safeguards be used that will allow the most effective use of electricity and at the same time eliminate the hazards.

The ***first step*** toward providing adequate electrical safeguards is to ***define electrical safety as the protection of personnel, equipment and materials.*** Such a definition indicates the nature and scope of the safety job and justifies effort and expenditures that could not otherwise be countenanced by management.

For example: It may be difficult to justify relatively expensive current limiting fuses for employee safety alone. Analysis shows, however, that inexpensive, but poorly designed fuses have little current limiting strength and provide little protection for the wiring and equipment between the fuse and the load. They generally will not interrupt the short circuit current without the rupture of the cartridge. Based on these findings, there is little doubt as to which fuse should be used.

Industrial plants must make a decision whether to operate the electrical distribution system grounded or ungrounded. An analysis of this problem will reveal many troubles that may develop on an ungrounded system. Two simultaneous grounds may short out the control button, pick up the contactor coil, and start motors or equipment unattended. The operating advantages in conjunction with personnel safety indicate that the system should be grounded.

In either of the above cases personnel may or may not be injured by the accident. However, in both cases damage will be done to equipment. Production will be interrupted.

People and Machines

In analyzing the hazards of electrical equipment, it is helpful to review possible hazards to both personnel and equipment so that safety practices can be integrated into the production functions. Unless this approach is taken, many hazards may go overlooked until an accident occurs.

If the equipment and procedures used in industrial plants are to incorporate adequate personnel and equipment protection, we must exercise ingenuity in locating the hazards, justifying the necessary safety devices, and making sure that safe procedures are established.

The second step is to provide management with assurance of a good return on its investment in safety. It is extremely difficult to justify expenditures for any function in a highly competitive business unless management is convinced that it is necessary and that it will bring a reasonable return. This return does not have to be in direct dollars. It can be a return measured in better

Electrical Safety

acceptance of leadership and in assurance that the protection is the best practical way to do the job and will result in fewer accidents.

For example: The use of safety switches and interlocked enclosures will assure the use of proper operating procedures. In case an employee forgets to follow safety instructions, he cannot open the front of the switch box until the switch has been placed in the off position. In case the employee forgets to remove power before beginning repairs on a piece of electrical control equipment, the power is automatically removed by the interlocked circuit when the panel or cabinet door is opened.

Disconnecting switches will cut off the power from equipment making it possible for repairs, adjustment, circuit addition, and modification to be done in less time at less cost and more safely. Properly located disconnecting devices will eliminate the necessity of making "hot taps" or working on "hot equipment" by isolating one part of the circuit or one piece of equipment without requiring the whole system to be shut down.

The third step is to establish a set of equipment specifications to be used in the installation of new equipment and modification of existing equipment. The specifications should make sure that exposed electrical parts are eliminated wherever possible; and that the equipment meets engineering performance requirements.

For example, providing metal enclosures for all current carrying conductors such as wiring, circuit breakers, control equipment, and switches will eliminate many exposed current carrying parts. It is essential that the non-current carrying metal parts be grounded to offer protection in case of a fault. Provision should be made so that the protective enclosure cannot be removed without interrupting the circuit. This can be accomplished by the use of interlocks on panel openings or points of access to exposed parts. In cases where electrical interlocks are impractical, a lock can be used. Provision for locking the openings or panels should be specified on new electrical equipment. This will also provide a control to assure that only qualified, authorized personnel can work on electrical equipment.

Engineering performance requirements should be established for equipment.

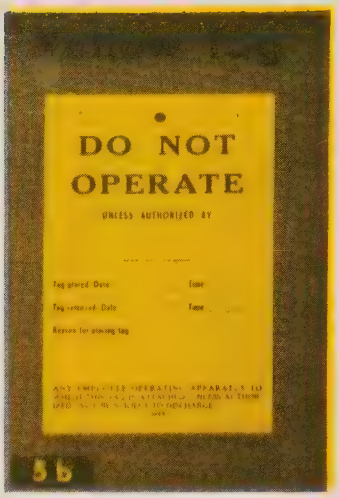
a. Fuses should be able to interrupt the maximum short circuit current available at the source without the deformation of the parts or emission of flame or molten material. Fuses with insufficient interrupting capacity may explode violently causing damage to equipment and personnel.

b. Switches should be so designed that the front cannot be opened unless power is removed. This will prevent employees from exposing themselves to shock hazards in case they forget the proper safety procedures.

c. Push buttons and control devices should be dust free and oil tight wherever the situation demands. A serious accident may occur if metallic dust shorts out the control button and accidentally energizes a piece of equipment. The safety of employees repairing or working on the equipment is in peril.

d. Electronic equipment circuits should have safety devices in the circuit to isolate high voltage from the exposed parts. Many high frequency induction heaters have only a D.C. blocking condenser to isolate the high voltage from the exposed work coil. A safety choke coil between the bottom of the tank coil and ground may eliminate a serious accident if the D.C. blocking condenser fails.

e. Extension plugs on portable equipment should have three prongs



used to prevent operation of equipment where damage to equipment would result.

to provide a ground return. This requires an adequately grounded distribution system and a receptacle to accommodate the three prong plug. The third wire will provide a low resistance path to ground in case of a fault in the equipment or in case the equipment comes in contact with a current carrying conductor. The fault current will take the low resistance path.

f. Breakers, conduits, and control equipment should have adequate margin to carry the needed loads under normal conditions. Overloaded electrical equipment may constitute a fire hazard, or cause a machine or insulation failure endangering personnel. The practice of overloading also invites circumventing safety devices such as overcurrent protection and blocking in control circuits in order to keep equipment in service.

Code and Special Problems

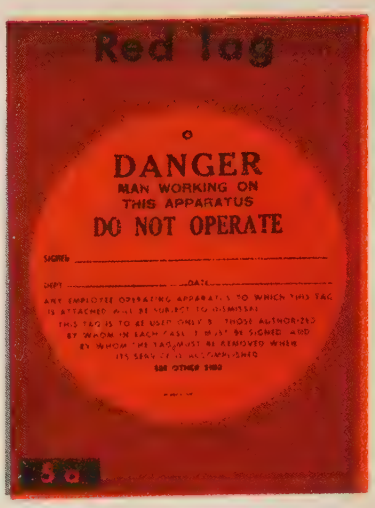
The National Electric Code has established a check list for safety features on most electrical equipment. Recently the Joint Industry Standards Committee published recommendations for a set of electrical specifications for equipment and control devices. This information should, of course, be supplemented and expanded for the particular problems in a plant. *(Cont'd next page)*

The fourth step is to provide a set of safe operating procedures.

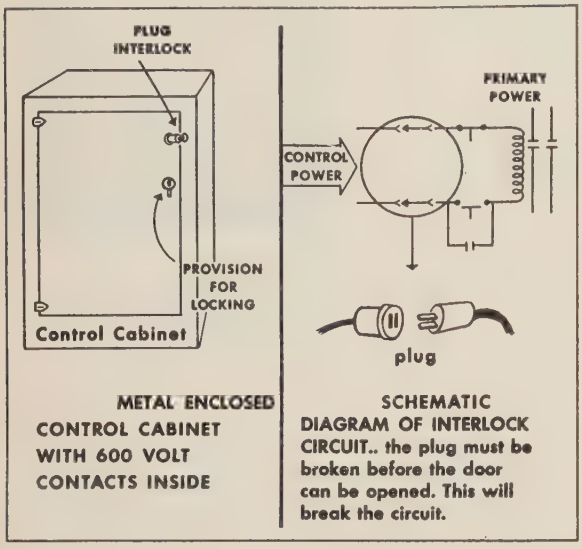
For example, it is sometimes necessary for maintenance personnel to work on equipment that would injure them severely if energized. A tag restricts operation.

Many times faulty equipment causes accidents. A regularly scheduled maintenance procedure should be established to repair and replace all equipment.

A procedure should be established so that the safety engineer reviews all incoming or relocated equipment.



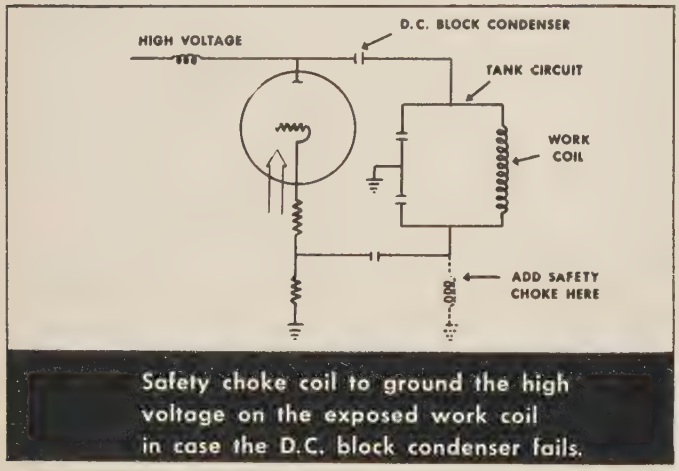
used to prevent operation of equipment that if operated would injure personnel.



METAL ENCLOSED CONTROL CABINET WITH 600 VOLT CONTACTS INSIDE

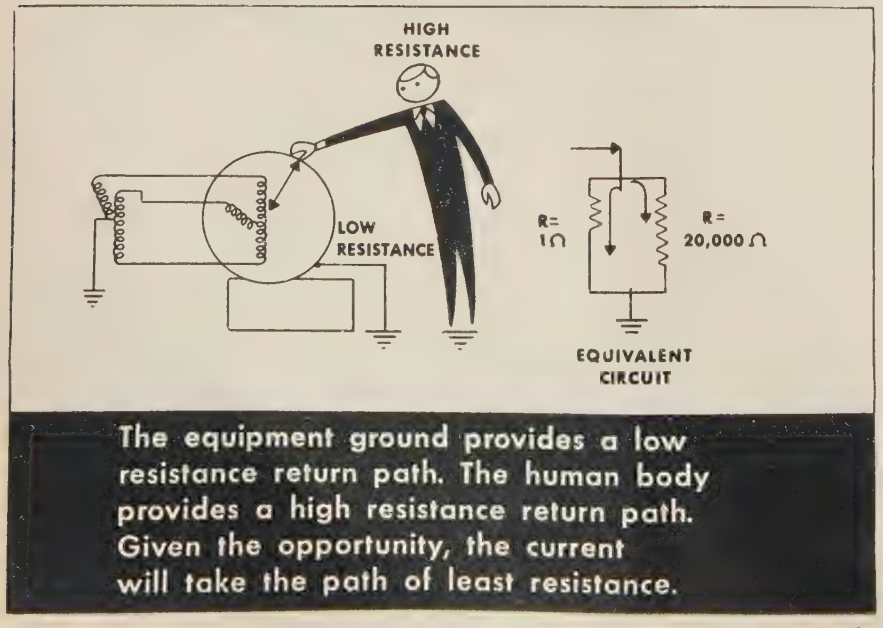
SCHEMATIC DIAGRAM OF INTERLOCK CIRCUIT.. the plug must be broken before the door can be opened. This will break the circuit.

Diagram at left shows 2 devices to provide more and better electrical safety. Cabinet cannot be opened without cutting off power, which protects the thoughtless workman. Interlock circuit used on machines as well as on cabinet is also shown. Cost is not prohibitive since interlock also protects machines and production while protecting worker. If using interlock is impractical, a regular lock can be used. Enclosure of current carrying parts will also eliminate many fatal accidents due to the hazards of high voltage.



Safety choke coil to ground the high voltage on the exposed work coil in case the D.C. block condenser fails.

Diagram at left shows method of grounding exposed high voltage in case of condenser failure, another important protection against electrical accident. In diagram below the importance of thorough grounding procedures is illustrated, for human safety. Double ground may also cause machines to operate unattended.



The equipment ground provides a low resistance return path. The human body provides a high resistance return path. Given the opportunity, the current will take the path of least resistance.

The fifth step is to provide adequate, individualized safety training for all employees.

Adequate equipment and correct procedures will be a big part of the overall electrical safety job. However, it is also necessary to develop in workers a safety alertness to electrical hazards in the plant. This safety training can best be done through individualized training.

All employees should have a knowledge of the hazard of making contact with electric current carrying parts. The effects of electric current on the human body have been fairly well established. It is generally conceded that approximately 100 milliamps through the human body will result in instant death. This shows that the so-called low voltages (under 600 volts, 60 cycles) can be lethal.

Employee training should also include what to do in case an accident occurs. An employee should know how to (1) remove the power from the circuit; (2) give artificial respiration; (3) and get to the dispensary. The knowledge may save a life.

In following these 5 steps you will fulfill the moral obligation that management has to provide a safe working environment for its employees; and, obtain a sound return on every dollar invested.

From an address delivered at the 42nd National Safety Congress.

Diagrams by courtesy of General Electric Co.

Western Maintenance Show

KEEN INTEREST is being shown by Western manufacturers and executives in the Second Western Plant Maintenance and Engineering Show, scheduled to be held at the Los Angeles Pan Pacific Auditorium, July 12–13–14, according to the Western office of Clapp & Poliak, Inc., nationally-known management firm which is producing the Show. Company presidents, plant engineers, maintenance supervisors, and production superintendents will be on hand to view and inspect the latest and most modern maintenance engineering concepts and products to insure efficient, profitable production without loss from machinery breakdowns or needless depreciation and wear.

The panorama of products will include many geared to the age of Automation: electronic records and data evaluating machines that can put a plant's maintenance engineering program on a productive, scheduled basis by pin-pointing *ahead of time* soft spots of wear or incipient damage; a completely automatic mobile lubrication system; a new ultra-sonic inspection unit, which tracks down beneath-the-surface defects in metal; and every class of products required in day-to-day preventive maintenance, including the newest in rust and corrosion resisting paints, solvents that clean without danger of toxic residue, industrial vacuum cleaners and blowers for every type of plant operation from breweries to dry chemicals production, completely automatic, "vertical take off" scaffoldings, inclusive kits for changing worn thread inserts without shutting down production, and a host of other tools and products for every maintenance need.

In addition, the concurrent conferences will delve into specific problems facing maintenance engineers in nearly every major classification of Western industry. Experts in particular fields, using the time-tested case history approach, will discuss practical solutions.

Pump- don't slop

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You can build an effective barrier against fires and accidents, reduce maintenance costs and make a general improvement in housekeeping if you pump liquids from drums instead of pouring, drawing, siphoning or spigoting. If you use Tokheim pumps you may also be rewarded with lower insurance rates.

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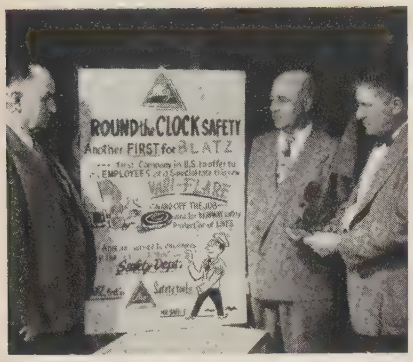
(For details, use Key # G-10 on card on page 55)

A SAFETY IDEA

Highway Warning Signal



County safety director, at left, and company president and police representative, at right, examine poster announcing company's plan to provide all employees with reflector-type flares to carry in their cars to protect against stalled-car smashups.

GREGG MEYERS, SAFETY and security engineer of Blatz Brewery in Milwaukee, feels that a large corporation with a safety department has an opportunity and responsibility to give its employees guidance both in safe driving to and from work, and in safe personal motoring. He and company management have made available to all employees a nationally known reflector-type highway signal which, set out on the road by day or night, warns passing traffic that a car is stalled along the highway.

In the past, the company has won other "first" awards for safety work, and this highway safety program by the famous old brewery is proving a great success. Color posters throughout the plant feature use of warning signals to alert traffic passing a stalled vehicle. Employees accepted the idea as sensible, and Milwaukee, city-wide, has become conscious of the terrible danger and losses caused by unguarded stalled cars along the roads. Dr. B. L. Corbett, Milwaukee County Safety Commissioner, attended the meeting with Company President Verbest when the warning signal safety campaign was launched.

Dr. Corbett is enthused at the progress highway safety signals, *already standard in trucking*, are now making in the passenger car field. He says: "Two-thirds of all highway distress calls last year involved cars that were stalled on streets and highways. From such accidents, involving stalled vehicles in the United States deaths totaled 1,120 and injured 87,740, plus billions in hospital and other costs, and in value of property destroyed."

The flares themselves are red reflector warning signals which fold up when not in use and spring open in one motion for emergencies. Mounted on a metal base, and equipped with a red flag as well as twin reflectors, the signal is said to reflect 24 candlepower over half a mile. Other features are stability in extremely high winds and durable construction.

Picture by courtesy of Vari-Products Co.

Three Billion Dollar Accident Load

ACCIDENTS ARE NOT a necessary by-product of industry, and their prevention pays, Thomas J. Berk, safety consultant, health and welfare division of a leading insurance company, told production executives from all parts of the country attending the American Management Association's spring manufacturing conference in Chicago recently.

Since employee accident prevention was first undertaken on an organized basis in the United States, many satisfying results have been obtained, Mr. Berk reported. Between 1935–39 and 1953 a reduction of more than 40 per cent has been noted in the frequency rate of disabling injuries per million man hours of exposure and nearly 50 per cent in the frequency rate based on days lost per one thousand man hours of exposure.

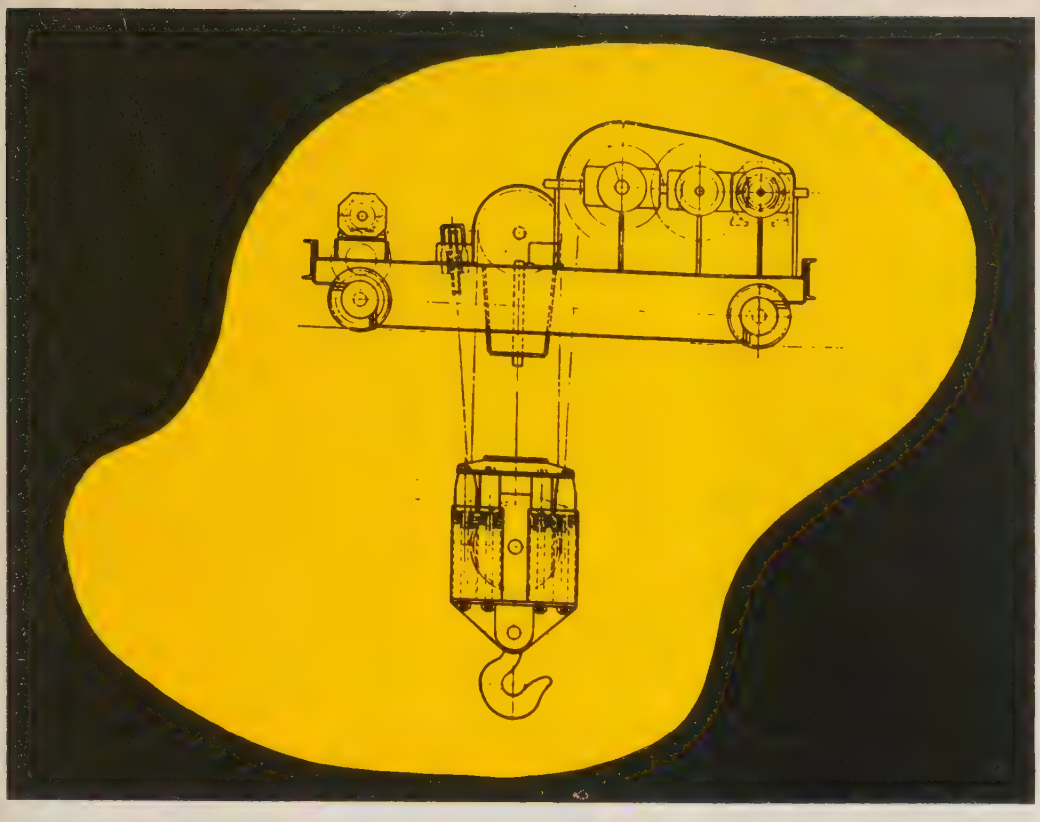
Still, he pointed out, 91,000 Americans are killed and 9,200,000 injured as a result of accidents each year. Occupational accidents alone last year cost the business economy more than three billion dollars.

To do something about it "requires the will and the perseverance to determine and do away with the underlying causes of these accidents, be they human or mechanical and whether management or employees are at fault. "What you must do," he told the conference group, "is encourage management to support the fight against accidents."

"If your management is economically minded," he suggested, "tell them a 10 per cent reduction in the frequency of accidents represents an annual saving of about $1,250 for each 100 employees or a 6 percent return on $20,000. If you can sell them more readily on a humane approach, tell them the real dividends of safety are the lives saved."

An accident involving an injury to an employee imposes a direct charge on the employer in payment of compensation, necessary medical expenses, or insurance premium. In addition to the direct charges, there are the indirect costs of time lost by other employees and supervisors, the economic loss because of the injured person's absence, the employment and training of a replacement, curtailment of production, damage to tools and equipment, and spoilage of raw or finished products. It has been estimated that the indirect costs incident to personal injury accidents alone average approximately four times as much as the direct cost of such accidents.

Off-the-job accidents are costly too. In some states the employer must recompense the employee for at least a portion of the income lost because of accidents resulting from non-occupational causes. In any case there is an economic loss through absenteeism.



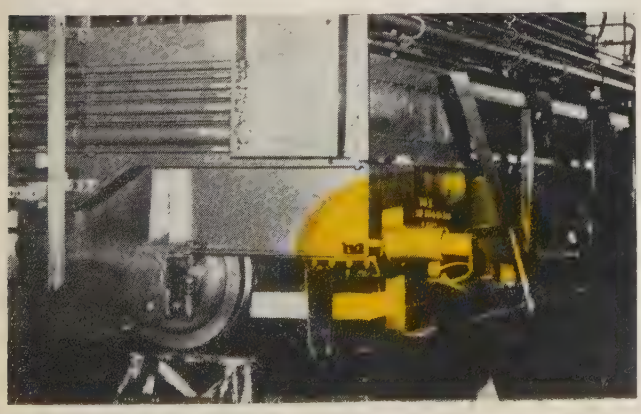
Patented hook block in the picture at left is one of key safety designs in building cranes for the future.

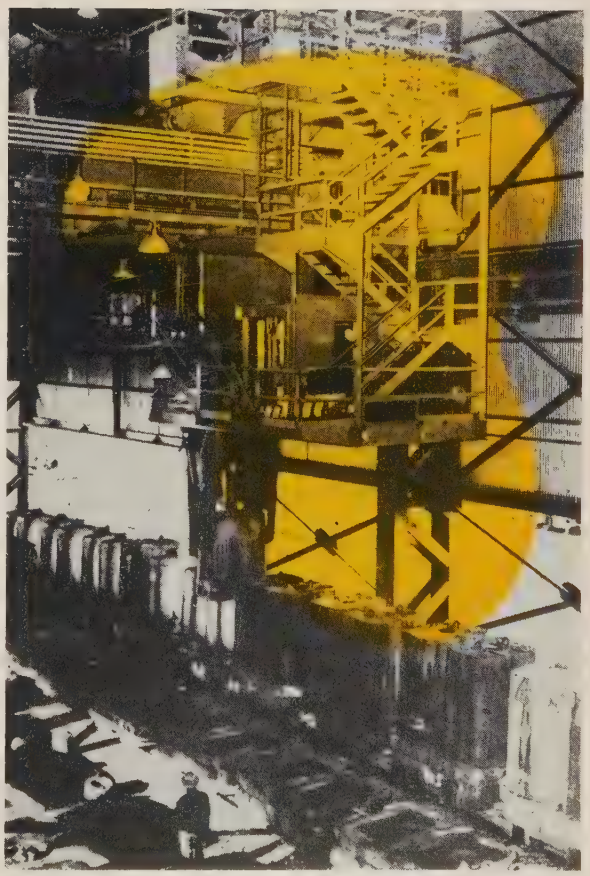
by **W. C. BENNETT**
Electrical Engineer
Alliance Machine Co.

Safety for Tomorrow's Cranes

SAFETY DEVICES ON CRANES are anything but new. Cranes in the steel industry are compiling an enviable safety record. But what about tomorrow's industrial cranes? It is immediately apparent that safety requirements will become increasingly more stringent as industrial cranes become outfitted for tomorrow's automatic factory. The accident hazard from a crane may well increase in direct proportion to the degree of automation, the increase in speed, the decrease in personnel training. We might well take our cue from the steel mills who have long been faced with expensive down-time and the additional hazard of handling molten metal and have consequently better equipped their cranes from a safety point of view.

The problem of the falling hook block is one of the





Large overhead crane in picture above has stairway access for its operator.

Outlined area in picture at left shows a spring-loaded bumper to absorb kinetic energy of loaded overhead crane,

most important safety considerations. High safety factor ropes, safety ropes, load cells, equalizer bars, self-aligning equalizers, limit switches, and special hook blocks are used in an effort to prevent the ropes from breaking.

Hoisting limit switches used in steel mills are almost always of the power-circuit type although a control-circuit limit switch is sometimes used to precede the power limit switch. The power limit switches are actuated when the hook block lifts a weight on a rope attached to a counter balanced arm on the switch. The hook block, as it nears the maximum usable height, trips the limit switch by lifting the weight. The limit switch disconnects the motor from its control and reconnects it for emergency dynamic braking, the brakes being set when the motor is disconnected. The switch is so connected that the operator can "back-out" or lower from the tripped position, but he cannot hoist until the switch resets. Since very little travel is necessary for the combination of dynamic braking and the spring set electrical release brakes to bring the load to a stop, this type of limit switch does not use much of the available lift. The other advantages of the power circuit limit switch are its dependability and its independence from extra conductors.

A patented hook block is sometimes used to back up the power circuit limit switch. This is a hook block with built in compression springs. The springs bring the kinetic energy of the block and the load to a safe stop against the lifting beam with a safety factor of 3 remaining in the ropes. Since the ropes are designed with a factor of safety of from 5 to 8, even moderately worn ropes will not break. This hook block is used in conjunction with a circuit breaker, or switch, that disconnects the power from the motor. The second limit switch, beside being an additional safety device, is non-resetable. The operator then must call a maintenance man to reset the second limit switch, and the maintenance man has the opportunity to determine why the first limit switch failed, and to repair this condition. This hook block is now required on new cranes built for one of the country's largest steel producers.

All the Safety Possible

On certain types of cranes where the ropes are inside a column and not visible, a slack cable limit switch of the control circuit type is used to prevent snapping the ropes by suddenly picking up a heavy load after the drum, motor, and brake wheels have acquired a high amount of kinetic energy. Some users specify warning lights to indicate when the hook block is approaching the limit switch.

Self-aligning equalizers are provided to distribute the load on the ropes when the center of gravity of the load does not coincide with the center line of the hook or when side loads are picked up.

Additional safety is provided on hot metal cranes. Ladle cranes have two motors on the main hoist and each motor has two power release brakes. Soaking pit cranes, ingot stripping cranes, and all heavy duty mill cranes have two brakes on the hoist and, as is the case with the ladle crane, each is capable of dissipating the energy required to bring the loaded hook from rated lowering speed to a complete stop.

Load cells are beginning to be used for weighing and they can be arranged to provide warning of severe overloads.

Travel motions are protected by emergency dynamic braking, hydraulic brakes, slow-down limit switches, and bumpers. On cranes equipped for it, emergency dynamic braking is effected when power is cut off or when the master is either returned to the off position or moved in the reverse direction. Slow down limit switches are actuated when the limits of travel are approached. These are control circuit devices that return the control to an intermediate speed point when the master is at a higher point. Bumpers are generally spring loaded with the springs designed to absorb the kinetic energy of the loaded machine traveling at about 50 percent speed. Hydraulic bumpers have been used. Other devices add to the safety of the travel motions. Hydraulic brakes are often used to give faster stops. Sanders are used when rain, condensation, or oil fumes make the rails slippery. Warning devices such as horns, sirens, gongs, and signal lights are employed.

Safety devices for the operator include heat resistant glass for excessive heat conditions, air conditioning, and a main line switch cut-off available both in the cab and close to the boarding point. Some bridges have bridge boarding switches to interlock the undervoltage circuit of the bridge control panel by a palm operated switch actuated by the person boarding the crane.

The maintenance man is protected by provision for padlocking all switches controlling power circuits in the "off" position. Wires for each control are wired in separate conduits and power, resistor, and control wires are wired in separate conduit. Every effort is made to have all conduit available from the foot walks, so that the erection of scaffolding or the use of ladders is not required. Repair platforms are generally provided by the mills so that periodic maintenance and major overhauls can be accomplished more safely. Stairs are used if at all possible, but if clearances dictate the use of ladders, they are provided with safety hoops. Stairs and walks are provided with nonskid plates or grating and sturdy handrails.

From Many Safety Features

Other safety features include the use of double shoes and double conductors, enclosed conductor systems, special conductor systems, adequate lighting, fire extinguisher holes in junction boxes, and the practice of using minimum wire sizes for power and control circuits.

Steel mill cranes are custom built and engineered, and most mills have

(Continued on page 23)

ENTHUSIASM

...INSTEAD OF Tolerance

By using imagination you can make safety attractive... vivid... interesting... and show each worker clearly how safety benefits him. And you have his enthusiastic cooperation—not mere tolerance.

YOUR
Safety News
PUBLISHED IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
Why Your Safety Means So Much
in Big Plants
& Small
Small plants SEEM to have so few accidents that many of them do not even figure their rate. If they did, the chances are they would get a big surprise, for the accident rate of small plants may be higher than for big plants. It doesn't matter what size plant we have—safety requires the cooperation of everyone for his own good.
As we see it:
Play it safe wherever you are.
John Doe
Let's put it this way: Assume that an average workman has a wife and two children and during a year's time each member of the family has an accident, such as a bad fall, cut, burned fingers or any injury that would prevent normal activity for a day or so. This might not seem too bad. But suppose in a plant of 10,000 workmen, each employee has a lost time accident. That would mean 10,000 injuries in one year! WOW!

Size 5½" wide x 8½" deep

...talks the worker's language

Full of color, pictures, humor and snap, it makes safety interesting and down-to-earth. 12 times a year it covers every accident hazard. Nationwide, leading industrial firms state it's the *only safety paper their employees will read* . . . and take home to their families.

It gives you the advantages of personal contact, saving time and money. When it prevents one Lost Time accident, it has more than paid its cost for the year. Try it . . . it works!

Your Imprint Here!

makes YOUR SAFETY NEWS your own publication . . . a good-will ambassador . . . another force for better industrial relations.

Every employee feels bucked-up by a note from the boss. If you desire, your facsimile signature can be printed here.

Your Signature Here

NOTE:

Your Safety News is designed to promote better employer-employee relations. Every item is carefully weighed from this viewpoint.

NSIDE PAGES
(pages 2 and 3)

So Goes the World
Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
From the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES
WORK OVERTIME
Dress for Safety
SAFETY SHOES
FALLS
FALLS KILL 18 EVERY DAY

N YOUR EMPLOYEE'S INTEREST

Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

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Artwork is carefully chosen to lodge home each point. The cartoon style makes YOUR SAFETY NEWS as familiar and as welcome as the Sunday supplement.

HE "FOLKSY" APPROACH

Keeping the contents folksy, adding the grace note of humor, delivers your safety message with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of tolerance.

IVID COLOR

Generous use of color gives sparkle, adds to the attention-riveting qualities of YOUR SAFETY NEWS. Each issue is as lively as any news-stand favorite.

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NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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Crane Safety

(from page 20)

their own safety requirements which must be built into the crane. The Association of Iron and Steel Engineers also has minimum standards.

The Safest Device

One of the greatest safety devices is not built into the crane, but is furnished by the user—this is proper inspection and servicing. A ladle that is dropped as a result of gearing that has never been lubricated or inspected is as bad as a ladle dropped by over-hoisting with no limit switches. Maintenance personnel have the opportunity, in many cases, to wire around or otherwise disable many safety devices—"Just to get it going until the proper repairs can be made." Many accidents have resulted from this practice. Inspection and servicing are beyond the control of the crane designer. However, the designer has a duty to emphasize continually the importance of proper safety practices. The designer also is obligated to refrain from making operation difficult, uncomfortable, or more expensive because of too many or unnecessary safety devices, as this often results in a temptation on the part of the user to by-pass them.

The future of safety devices for steel mill cranes will center around increased visibility for the operator, greater control of higher speeds, and warning and communication devices. Power circuit devices are already widely used to provide more positive and dependable operation and the tendency always has been to keep the power circuit as free from complexity as possible. Control circuits are being refined to provide smoother slow downs when limits are being approached. Enclosed conductors will be used more extensively in the near future. The use of industrial television to increase visibility has been considered.

The automatic factory will first require high speed operator controlled cranes. Here the problem will be accurate control of the high levels of kinetic energy. As speeds become higher, provision will have to be made to require less of the operator's attention to each single motion—this will necessitate more accurate control and more safety devices. After this point is reached, the transition will be made to pulpit control of cranes together with other machines. (Pulpit control of a semi-automatic type has already been contemplated for billet cranes for blooming mills.) The day will probably come when cranes operate completely automatically.

Automation Requires . . .

Full automation will require a multitude of limit stops and signal devices, but the maintenance should be greatly simplified because with expensive and complex machinery and carefully controlled schedules, absolute top performance must be kept up through preventive maintenance.

Pictures by courtesy of Westinghouse Electric Corp.

From an address delivered at the 5th Biennial Materials Handling Conference, sponsored by the Westinghouse Electric Corp.

New York Revises Codes

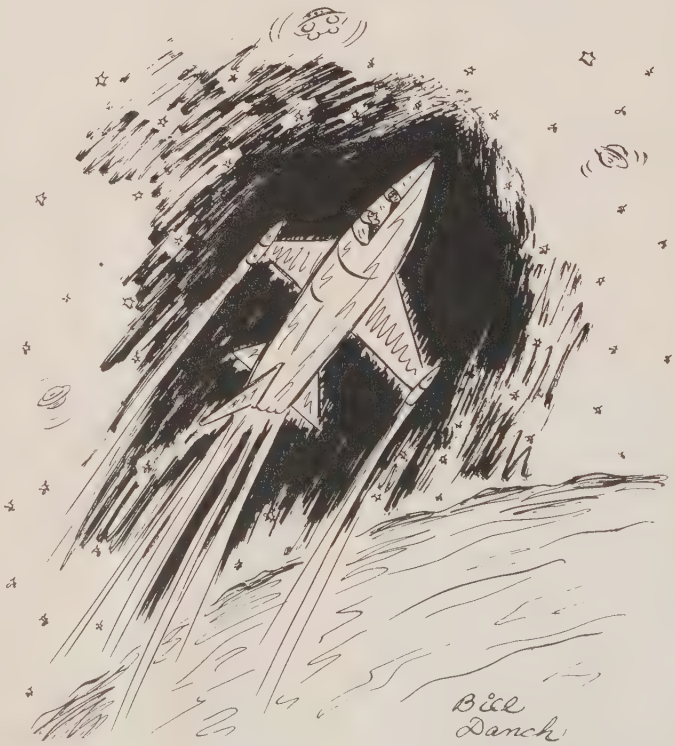
AN ACCELERATED program to modernize New York State's worker-safety regulations has been announced by Rear Admiral William S. Maxwell (U.S.N., retired), chairman of the New York State Labor Department's Board of Standards and Appeals.

These regulations are embodied in a series of State Industrial Code Rules.

Admiral Maxwell said, "Our primary concern is protection of the worker. Because of constantly changing modern techniques and machinery, these rules must be continually revised."

Public hearings have been held on the codes for protecting laundry workers, protection from radiation hazards, fire-resistive materials, automatic sprinklers, and mercantile establishments.

Other codes set for public hearings are those relating to exits in factory buildings; removal of dusts, gases and fumes; and industrial spray coating.



"Gosh! I'm glad you're a safety engineer!"

KEEPING UP WITH...

IMPROVED STEP LADDER

AN IMPROVED step ladder, especially designed to provide painters and decorators with additional safety and convenience, has been announced by The Patent Scaffolding Co., Inc. One of the many new features of the Improved Painter's Step Ladder is the functional placement of the back rungs. They are alternately spaced with the steps to allow workmen to adjust working height every 6" instead of the customary 12". The ladder can also be used as a trestle.

Additional strength and rigidity are provided by pressed steel knee braces on top and bottom steps on the 4', 5' and 6' sizes, and also under the middle step on the 8', 10' and 12' sizes. Steel rung braces are similarly placed on back rungs. In addition, there are steel tie rods on all front steps and a strong, horseshoe-type hinge. Approximate weight per foot, 4 lbs. Available in 4', 5', 6', 7', 8', 10' and 12' sizes.

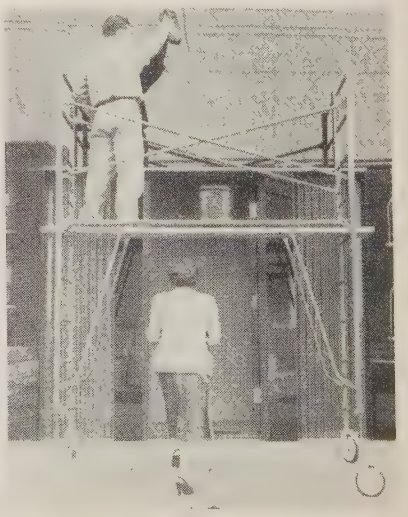
For details, use Key # LS-1 on Inquiry Card on page 55.

OVERHEAD MAINTENANCE SCAFFOLD

THE NEW "ADJUSTOMATIC" Scaffold answers the problems of off-the-floor maintenance and repairs in industrial plants, utilities, and institutions. Made by Automatic Devices, Inc., this portable working platform is not only adjustable to exact working heights but also straddles over machinery, furniture, and other fixed equipment.

There are only two basic parts: panels and braces. The braces also serve as safety guard rails. There are no loose parts—no wing nuts, no bolts. Units are assembled in a few minutes by one man, and are extendable to any practical height or length. They can be equipped with levelling jacks where surfaces are not regular. Casters, with safety brakes, telescope into the levellers or the panel legs, as desired.

For details, use Key # LS-2 on Inquiry Card on page 55.



LADDERS & SCAFFOLDS SERIES
other articles in May and June

Ladder & Scaffold Developments

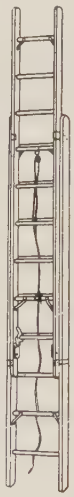
COMBINATION "A" & EXTENSION LADDER

A COMPLETELY new Alco-Lite Aluminum Ladder is being introduced to industry. It is an extension ladder that can be quickly converted to an "A" type Ladder simply by pulling the bottom fly section from the butt ladder. This Combination "A" and Extension Ladder is extremely versatile for use on such jobs as industrial painting, cleaning, and heavy maintenance. It is available in extended lengths from 21′ to 29′. Weights range from 52 to 67 lbs.

A special feature is an automatic locking device which prevents the ladder from closing when used as an "A" Ladder. Adjustable, rubber tipped outriggers add stability and also are handy when using the extension ladder on uneven ground. The outriggers retract into the side rails for easy storage.

The "CAE" Ladder is made of industrial high tensile strength aluminum alloy. Made by Aluminum Ladder Co., it is non-sparking and will not rust or rot. The rungs are 1″ tubular corrugated aluminum and are permanently secured to the side rails with an exclusive gusset plate and expansion bushing construction. It is said to meet the standards set up by the ASA and Metal Ladders Association.

For details, use Key # LS-3 on Inquiry Card on page 55.



MECHANICS' EXTENSION LADDER

A FINE SAFETY record can be shot to pieces by an accident involving a ladder which was not designed for the work-load placed on it. "The Right Ladder for the Job"—means a job performed safely and at less cost.

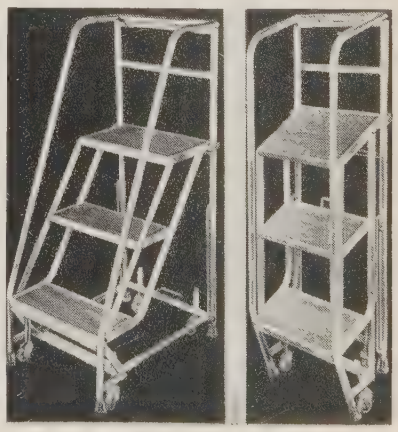
The Mechanics' Extension Ladder illustrated here is a heavy duty ladder built to sustain heavy loads and bears the Underwriters' Label of Approval. This improved Extension Ladder has rail dimensions of 1–5/16 x 3″ in shorter lengths and 3½″ on longer sizes, and is equipped with 1¼″ second growth hickory rungs. Heavy duty Guide Irons ¼ x 1½″ are riveted steel to steel for maximum strength. Top guides are 3/16 x 1½″ and 2″, while the pulley is 1½″ dia. for the ⅜″ Manila rope. All hardware is zinc plated. The locking devices are heavy duty automatic spring locks, and rungs are dipped in wood preservative. This improved, heavy duty, Extension Ladder is manufactured by The W. W. Babcock Company, Inc.

For details, use Key # LS-4 on Inquiry Card on page 55.

FOLDING STEP LADDER

TO THE STRENGTH and stability of Ballymore Safety-Step ladders has been added the convenience of an easy fold-up action, it is announced by the manufacturer, the Ballymore Company. The new "Ballyfold" unit is a standard 3-step aluminum model, equipped with retractable ball-bearing casters, and weighs only 18 pounds.

For countless jobs requiring the handling ease and versatility of a

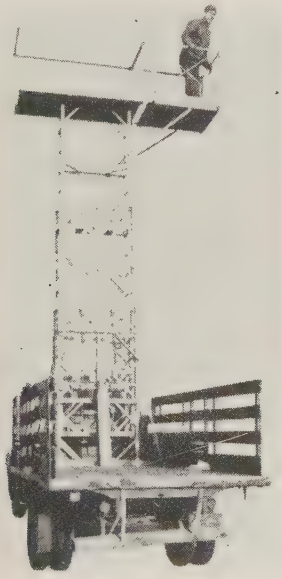


lightweight folding ladder, the new product marks the first time a standard Ballymore "roll or grip" ladder has been equipped with a folding mechanism. Ladder closes to a compact 10" depth for easy carrying or storage. Deep top step is 30" above floor providing ample height and safety for average working levels up to 7' 6".

Without the weight of a person, ladder can be rolled smoothly and effortlessly into position. Casters retract automatically when user steps on, providing solid 4-point contact as wide-base rubber-tipped legs grip floor.

For added support and safety, ladder is equipped with sturdy handrails. Steps are covered with nonslip corrugated rubber treads. All parts are welded for maximum strength and rigidity.

For details, use Key # LS-5 on Inquiry Card on page 55.



REPAIR TOWER

A REPAIR TOWER that is truck mounted and operated from the truck engine has been introduced by Atlas Industrial Corp. It can also be demounted and used in interior of buildings. The Repair Tower comes in one piece with no erection required . . . no loose parts. It may be used at any desired height. The all welded, steel construction provides rugged, safe strength.

For details, use Key # LS-6 on Inquiry Card on page 55.

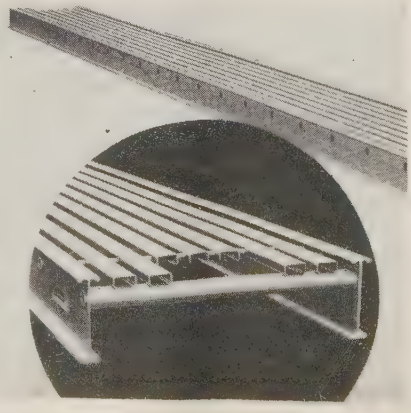
PLATFORM EXTENDER

A NEW ACCESSORY that increases the value of their mobile ladder-truck has been announced by the Safe-Lad Mfg. Co. A 12" extension platform has been developed that enables operators to do maintenance work at a 14 foot level. Constructed of lightweight aluminum with a Gripstrut step surface the unit weighs only 6½ lbs. A simple locking device, quickly attached to the top step, prevents any danger of slipping or tripping. When not in use, the platform can be quickly detached and stored in base tray of the ladder-truck.

For details, use Key # LS-7 on Inquiry Card on page 55.

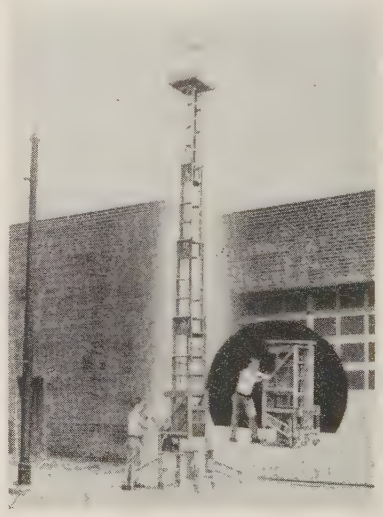
RATED SCAFFOLD PLANKS

THE FIRST LINE of aluminum swing stages and scaffold planks with a rated and tested load carrying capacity is being produced by the Louisville Ladder Company. The total load carrying capacity is determined by use of a safety factor of four (4) multiplied by the safe working load. Each 1200 pound capacity unit will carry a safe, center-concentrated load of 300 pounds. The 1600 pound capacity is rated on a 400 pound center load with the same factor of safety.



The load carrying ability is a product of the scientifically designed shape of the side rail. The over-all weight is kept low by use of a special "C" shaped channel decking with a knurled surface and longitudinal ridges. Decking is suspended over the rungs. Lengths of 24 feet are attained without trussing. A feature is the Louisville patented "Boss" for securing the rung to the side rail.

For details, use Key # LS-8 on Inquiry Card on page 55.



TELESCOPING PLATFORM

THE NEW SCAF-FOLD, a new development in portable work platforms, features removable gate-leg outriggers with leveling screws, according to Atlas Industrial Corp.

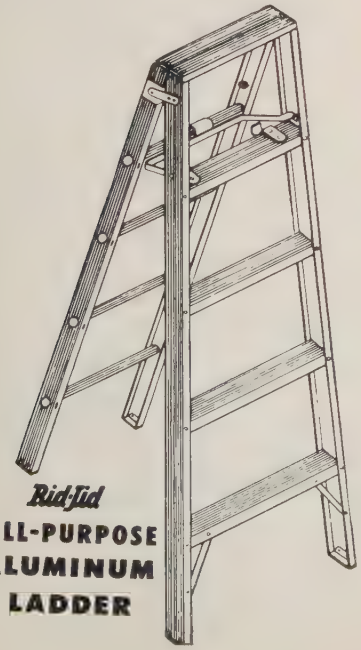
This telescoping work platform is ideal for tight spots such as getting into and out of small elevators, doorways, etc. The Scaf-Fold comes in one piece, no loose parts, is safe, sturdy, yet easily rolled and easily raised. It is suitable for all overhead maintenance such as painting, lighting, cleaning, etc.

For details, use Key # LS-9 on Inquiry Card on page 55.

EXTRA-WIDE SCAFFOLD

AN EXTRA-WIDE Aluminum Ladder Scaffold has been introduced by the Patent Scaffolding Company. This 4′ 6″-wide scaffold provides users with added stability and extra working room for painting, relamping, cleaning and general maintenance work. Lightweight aluminum components are easy to handle and erect. Base sections are 6′ high and other heights are achieved by adding other units of 4′ and 5′ 4″. A built-in 24″ leg adjustment permits added height adjustment without lifting scaffold. Rubber-tired casters permit scaffold to be moved from job to job.

For details, use Key # LS-10 on Inquiry Card on page 55.



FOUR-PURPOSE LADDER

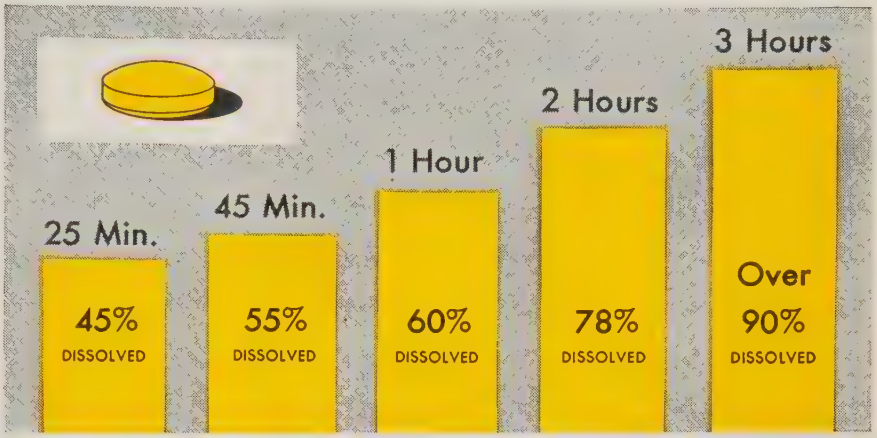
A NEW TWO-PIECE all-aluminum ladder that changes instantly to fit four different uses is being introduced as an addition to the Rid-Jid ladder line of The J. R. Clark Co. The most common use of the ingenious new design called the Rid-Jid All-Purpose Ladder is, as a step ladder in lengths from 5′ to 8′. The front section has wide serrated steps and the back section 1⅛″ deeply grooved rungs.

By sliding the back section upward and locking it into position it is ready for use as a stairway ladder. By sliding and locking the sections together, it serves as a standard extension ladder. In its fourth use, the ladder is separated to make a pair of light, yet sturdy, single ladders.

For details, use Key # LS-11 on Inquiry Card on page 55.

Controlled dissolving action is the reason Morton Impregnated Salt Tablets give fast relief—without nausea

This chart shows the controlled dissolving rate of a typical Morton Impregnated Salt Tablet



Within minutes, the average person begins to feel better, work better, when he takes Morton Impregnated Salt Tablets. For as soon as the tablets are taken, essential body salt lost through perspiration begins to be replaced—but at a gradual rate, so as not to cause nausea.

For more than three hours after Morton Impregnated Salt Tablets are taken, they continue to fight heat fatigue by supplying salt. Careful, uniform coating of the salt crystals in each tablet results in controlled dissolving action —the reason Morton Salt Tablets give such excellent results.

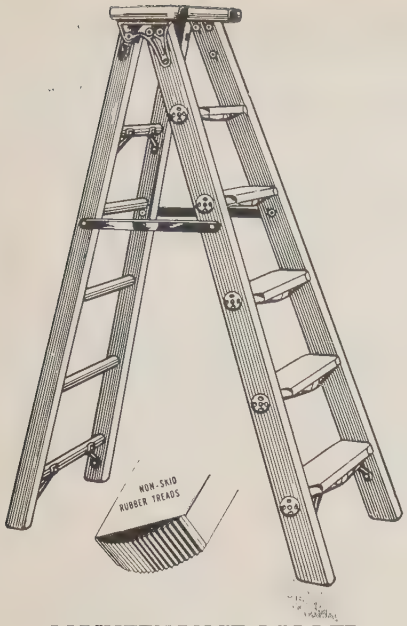
Morton Yellow Impregnated Salt Tablets come in a handy, disposable dispenser. Plastic and heavy-duty aluminum dispensers are also available, as are plain salt tablets.

Place your order this week with your local safety equipment distributor. If he cannot supply you, write:

MORTON SALT COMPANY
Dept. SM-7, 120 South LaSalle Street
Chicago 3, Illinois

Complies with Federal Specifications SS-S-31e for Type III, Class C Impregnated Salt Tablets
U. S. Patent No. 2,665,236
Patented 1954 (Canada) No. 501,316

(For details, use Key # G-11 on card on page 55)



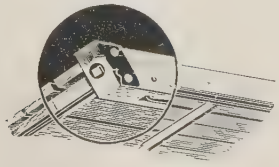
MAINTENANCE LADDER

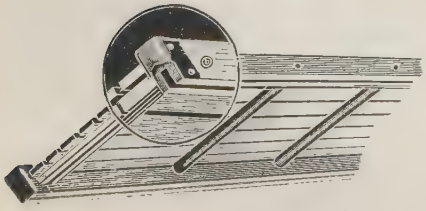
THE BLUE RIBBON Titanic Step Ladder now carries the Underwriters' Laboratories label, attesting to strength and safety factors. In addition, non-skid rubber treads are attached to each foot to assure maximum surface-grip. Made by the Goshen Mfg. Co., the Titanic is a super-strong maintenance ladder, made of carefully selected extra-dimension stock. These new features, added to its established success, make the Titanic even more safety-assured, according to the manufacturer.

For details, use Key # LS-12 on Inquiry Card on page 55.

SCAFFOLD PLANKS

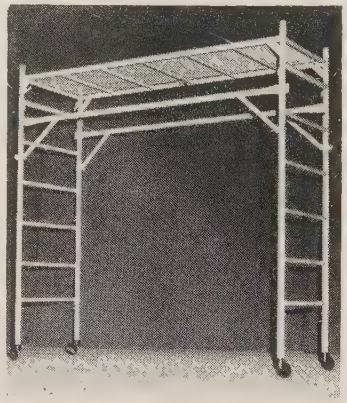
EXTRA TRUSSING is a feature of the line of "Safety Scaffolds" made by Woodenware Products Corp. Three general styles are available: Decorator's Style, 12" wide, with the floor boards flush with the top of the side rails for smooth footing; Master Style, 17 or 20½" wide, and the extra heavy duty Mason's Style, 24 or 28" wide. Both of the latter two styles have side rails extending above the floor boards so workers can feel the edge of the scaffold with their toes.





These scaffold planks are cross reinforced with steel rods. The lighter units also have steel wire reinforcing in a groove on the underside of the side rails, with an adjustment for taking up slack. Heavier units have steel bands countersunk and riveted every 30 inches on the side rails. Metal sleeves on the ends prevent chafing. The scaffold material is fir or hemlock with hickory rungs.

For details, use Key # LS-13 on Inquiry Card on page 55.



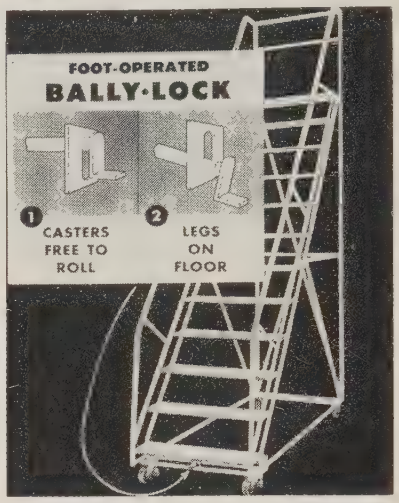
ALL-PURPOSE SCAFFOLD

AN ALL-PURPOSE portable scaffold designed to roll through doorways and give access to hard-to-reach places, is being offered by Bil-Jax, Inc. The single unit requires only nine parts, including the expanded metal platform.

If planking is desired in place of the metal platform, the latter can be replaced with conventional braces. The planking then can be placed crosswise on the braces or lengthwise on the ladder rungs.

The end ladder sections for the scaffold are available in 3, 4, 5 and 6-foot heights. Where platform heights of less than 3 feet are desired, casters may be inserted into the metal platform sockets, eliminating the need for ladder sections. Multiple units 2, 3, 4 or more sections high, used singly or in tandem, permit a variety of setups.

For details, use Key # LS-14 on Inquiry Card on page 55.



EXTRA TALL STEP STANDS

DESIGNED FOR maximum safety and handling ease, new "Hi-Boy" Safety Step Ladders give accessibility to working levels up to 15 feet, according to the manufacturer, the Ballymore Company. The new ladders are offered in six models, from 9 to 12 steps ranging in over-all height from 85½" to 114". All welded-steel construction provides strength and long wear. Frame is ¾" steel tubing.

Mounted on heavy-duty ball bearing casters, ladders are rolled easily without lifting or straining. When moved into position, ladders are quickly anchored to floor by stepping on pedal under front step. This Ballylock causes two front rubber-tipped legs to engage floor, preventing kick-out and wobble. Legs are retracted by spring-action when pedal is moved slightly to left.

All models are equipped with sturdy guard rails. Non-slip step plates are made of either expanded steel tread, grip steel lath or rubber-clad steel plate. Special rust-resisting coating produces attractive, hard-wearing aluminum finish.

For details, use Key # LS-15 on Inquiry Card on page 55.

DOUBLE-STEP LADDER

ALCO-LITE is introducing a new folding F900 aluminum ladder especially designed for heavy use. It features safety corrugated 4" wide steps on both sides of the ladder. This permits the ladder to be used by two workers simultaneously.

The ladder is made of industrial, high tensile strength aluminum alloy. It has a corrugated 16" x 8" platform, rubber feet and folds for easy storage. Each step is permanently riveted to the side rails with eight rivets. Non-sparking and non-rusting, it is available in heights from 4' to 14' and weighs from 20 to 73 lbs. The Aluminum Ladder Co. claims the ladder more than meets the standards set up by the ASA and Metal Ladders Association.

For details, use Key # LS-16 on Inquiry Card on page 55.

THOSE IN THE KNOW
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More Efficient—Lower Cost
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The Acknowledged Leader in the Lens Cleaning Field
The WILKINS Co., Inc.
Cortland 2, N. Y.
(For details, use Key # G-12 on card on page 55)

HANGING SCAFFOLD

HANGING A scaffold over the parapet rather than building the scaffold up nine stories from the street was the unique solution worked out by William MacDonald, Cleveland masonry contractor.

The scaffold consisted of a 21' x 14' tower made up of Waco Steel scaffolding on the roof with 22' outriggers cantilevered out over the parapet. From the outriggers were hung 30" wide Waco ladder frames held together with toggle pins and spaced with pivoted cross braces. These frames, which extended 19½' down, were planked and the sides and back were enclosed with chicken wire for safety. Counterbalance for the hanging part of the scaffold was 4000 lbs. of sand bags placed on the scaffold on the roof 15' back from the parapet. The entire unit rolled on casters over boards laid on the roof.

The scaffolding made by Waco Manufacturing Co., has design fea-

tures to simplify and speed up erection: the "Speedlock," for attaching braces to the frames; and the built-in, floating coupling pin for one man erection. Built-in ladders provide easy access to working levels and pivoted cross braces increase the safety of the equipment.

For details, use Key # LS-17 on Inquiry Card on page 55.

SELF-LEVELING LADDERS

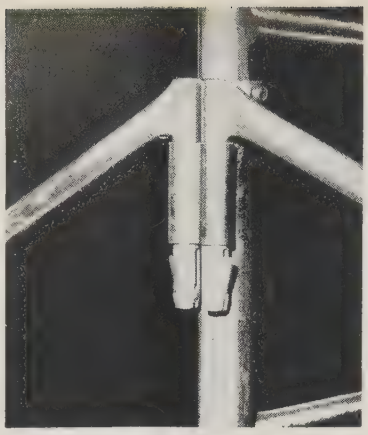
INDUSTRIAL AND MECHANICS ladders are now being made by the Richbilt Manufacturing Co. with the patented Bendick Self-Leveling Hinge that automatically adjusts itself to unlevel surfaces. It is said that these safety ladders cannot rock, twist, sway, walk or crawl; that ladder fears are eliminated, efficiency increased, and accidents prevented.

The Industrial Ladder is a heavy-duty model, while the Mechanics Ladder is designed for painters, paper hangers, etc. Both types are available in a standard range of sizes and are constructed of heavy-duty selected lumber to provide many years of safe use.

For details, use Key # LS-18 on Inquiry Card on page 55.

GALVANIZED SCAFFOLDING

THE CHANGE TO "Galvanized" on all their scaffolding, at no extra cost, has just been announced by Uni-

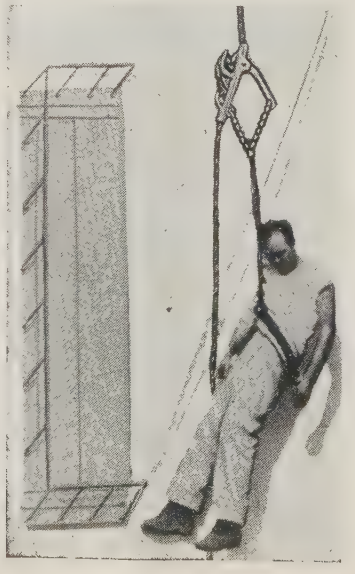


versal Manufacturing Corporation, producers of steel-panel scaffolding. Over two years ago, Universal started research to perfect this low-cost method to conquer rust, which prevents fast erection of steel scaffolding. In addition to the rust-prevention, the lubricating quality of galvanizing helps speed fitting work in scaffold erection and dismantling. In contrast to the distinguishing blue enamel paint previously applied to the Universal products, their line is now distinguishable by the silver-golden color of the galvanized coating.

For details, use Key # LS-19 on Inquiry Card on page 55.

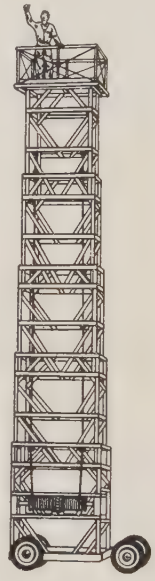
SAFETY LIFELINE LOCK

THE SAFETY Lifeline Lock is designed to prevent injury should a workman fall or a scaffold fail. In use, it slips on to the lifeline rope and moves along the rope with the workman, either up or down, as he slides it to the desired working position.



Falling causes the device to lock instantly, automatically and positively, holding him safe. This device is said to be foolproof and rugged; requires no adjustments. Made by Safety Tower Ladder Co., it is equally effective in its locking action should a workman slip or a scaffold fail while the scaffold is being raised or lowered and the Lifeline Lock is being moved along the rope to a new working position. Recommended for use on standard ¾ or ⅞" Manila rope.

For details, use Key # LS-20 on Inquiry Card on page 55.



MOBILE WORK PLATFORM

A MOBILE WORK PLATFORM has been announced by Atlas Industrial Corp. This is especially designed for overhead maintenance where the platform must be rolled over rough terrain. The platform comes in one piece with no erection required, no loose parts. It may be used at any desired height. All welded steel construction insures safety. The entire unit is mounted on a trailer suitable for rough terrain; leveling jacks are included. Suitable for all overhead maintenance such as painting, lighting, cleaning, reaching pipes, etc.

For details, use Key # LS-21 on Inquiry Card on page 55.

ALUMINUM STEPLADDER

THE NEW "AIRWEIGHT" aluminum stepladder is extremely light, yet constructed to provide safety, plus ease-of-handling and dependability, according to the Newark Ladder & Bracket Co. Reinforced angle braces throughout gives support to the entire ladder assembly. Steps are "skid proof" to prevent slipping. Rubber safety shoes are riveted to all four ladder legs to prevent slipping and marring of floors. Safety type spreaders prevent pinching of fingers when opening ladder. Raised ridges on pail rest prevent objects from slipping off. Ladder is unconditionally guaranteed, and will not rust, warp, or crack. Safety tested to carry over 1000 lbs., it is being used by contractors, maintenance people, and industry.

For details, use Key # LS-22 on Inquiry Card on page 55.

VI-LAN CLEAN

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on the job and in wash rooms will prevent the menace of

dermatitis

. . . lost man hours and lost profits!

VI-LAN CLEAN
The Antiseptic Skin Cleanser With Lan-Act 12
DRY CLEANS WITH OR WITHOUT WATER
May Be Used On Face, Hands, and Other Parts Of Body
DIRECTIONS FOR USING

This new antiseptic all-purpose skin cleanser contains ACTAMER, a non-toxic bacteriostat, perfected by Monsanto Chemical Company, exerting a powerful inhibitory action against harmful skin bacteria for 48 hours after use.

VI-LAN CLEAN does what ordinary soaps can not do. It removes greases, oils, paint, acids, graphites, printing inks, asphalt, rubber, gasket cements and other industrial soils and sediments, and provides the prophylaxis inhibiting the germs which too often put employees out of commission.

So, serve and protect your employees with VI-LAN CLEAN—install the new VI-LAN CLEAN dispensers in every wash room and on critical on-the-job locations. MAY BE USED WITH OR WITHOUT WATER.

To fill dispensers VI-LAN CLEAN is packed in polyethylene bags, allowing you to release any amount of the cream simply by finger pressure on the bag without waste. This container also may be used conveniently as a portable dispenser on trucks and outside jobs.

Also available in convenient pint, quart and gallon containers for home and shop use.

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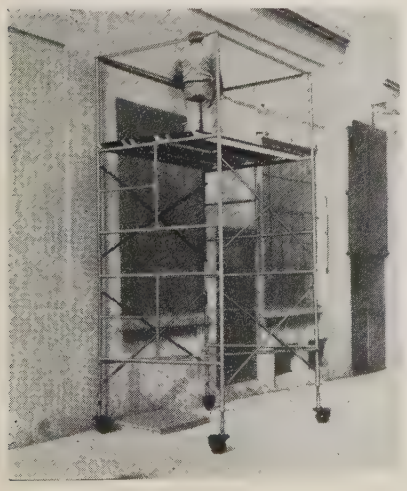
(For details, use Key # G-13 on card on page 55)



ALL-PURPOSE SCAFFOLD FRAME

A NEW ALL-PURPOSE frame that combines maximum economy for bricklaying with complete safety has been announced by The Patent Scaffolding Co., Inc., for use in erecting "Trouble Saver" Sectional Steel Scaffolds.

New design features of this frame make it economical for masonry construction and repairs, and with its "built-in" ladder it makes an ideal rolling scaffold for interior and exterior maintenance and repairs. By installing planking at any level within the frame, it provides a two-level scaffold. Side-wall brackets can be used to form a separate mason's platform.

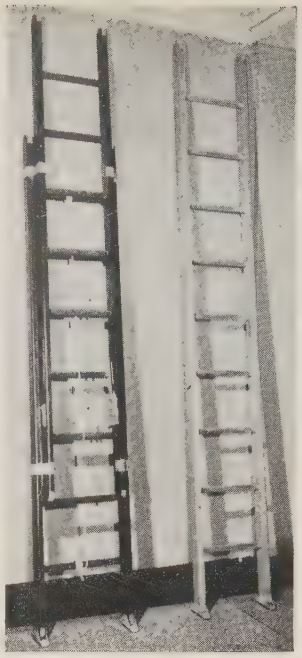
Made in five heights, 3', 4', 4' 6", 5' and 6' 6", these all-purpose mason frames are a full 5' wide. They are

available with or without the fast-acting SlideLoks for securing diagonal braces to studs. Approved by Underwriters Laboratories, Inc.

For details, use Key # LS-23 on Inquiry Card on page 55.

FIBER GLASS LADDERS

A NEW TYPE of fiber glass ladder combines the light-weight qualities of light-metal ladders with the non conducting qualities of wood ladders. Developed by the Putnam Rolling Ladder Co., the new ladder utilizes the tough fiber-glass sandwich construction used in the fabrication of boats, airplanes and auto bodies. The rails have cores of balsa wood laminated and coated with fiber glass re-enforced plastic. The aluminum or magnesium non-twisting rungs are plastic-welded to the rails to become an integral part of the ladder. The result is a smooth, splinter-free ladder of light weight for ease of handling.



The manufacturer claims that the ladder's strength-to-weight ratio exceeds those of most metals and because of its resistance to chemicals, heat and water absorption, it is more durable than wood. Standard-duty and heavy-duty types are available in both single and extension models of various lengths.

For details, use Key # LS-24 on Inquiry Card on page 55.

ALUMINUM STEP STANDS

ALL-ALUMINUM safety-step ladders to meet the need for lightweight, non-corrosive ladder equipment are available from the Ballymore Company. Easy to use and keep clean, the new ladders are standard in seven models, 1 to 4 steps, for working levels up to 8'.

Smooth-rolling ball-bearing casters permit ladders to be moved about easily. Automatic locking action instantly retracts casters under the weight of a person, providing four-cornered support with rubber-tipped legs. Casters engage floor again when person steps off.

Construction is of tough all-welded aluminum tubing. There are no bolts or rivets used, no parts to loosen. Steps are solid-rubber covered. Sturdy handrails are offered on 3- and 4-step units.

For details, use Key # LS-25 on Inquiry Card on page 55.

ALUMINUM EXTENSION LADDERS

RID-JID ALUMINUM extension ladders of the J. R. Clark Co. are made of high strength alloy for safety,

NOW!
AN IMMACULATE
LOW PRICED
STEEL FLOOR
THAT IS
SAFE!
ANCORETTE
STEEL FLOOR PLATES
WITH ITS (33) SAFETY ISLANDS THAT CHECK THE SLIGHTEST TENDENCY TO SLIP OR SKID
(33) TONGUES ANCHORED IN OPPOSING DIRECTIONS IN FRESH CONCRETE TO INSURE IMMOBILITY AND SECURITY OF THE PLATE
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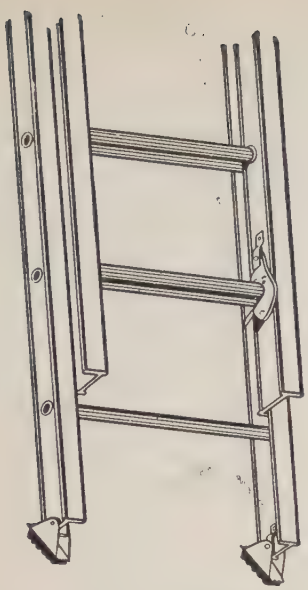


RID-JID ALUMINUM EXTENSION LADDER

comfort, usefulness and sturdiness. Rungs are 1½ inches in diameter and are deeply serrated to eliminate foot slippage. Two-way safety shoes have rubber treads for work on smooth surfaces and sawtooth edges for use on ground.

The extension ladders come equipped with heavy-duty gravity hooks for automatically locking the extension in place. Curved ends of the side rails prevent marring of walls. Available in 20 to 40-foot lengths, with or without rope and pulley attachments.

For details, use Key # LS-26 on Inquiry Card on page 55.

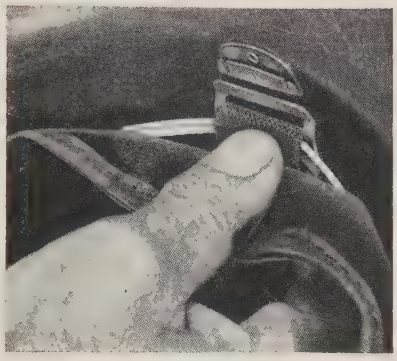
Automation Will Add to Maintenance Man-Power

SPEAKING BEFORE the annual convention of the Electrical Maintenance Engineers Association of Southern California, Howard F. McCullough, general manager of the General Electric Company's Service Shops Department declared that "industry is entering a new era—a truly industrial evolution where the output per man-hour is multiplied many fold by low cost electric energy."

As a result of this high consumption of electric power, more production will mean more automation, and more maintenance and maintenance personnel. All of this means, according to Mr. McCullough, that industry will double its maintenance, or "housekeeping" expenditures to about 22 billion dollars annually in the next 10 years. Therefore, industry must direct to its maintenance functions the same degree of management skill now devoted to production, he said.

In McCullough's opinion, present and future production demands require the training of highly skilled personnel and well-planned maintenance to prevent idle machinery and profit-eating down time costs. The ultimate aim of any maintenance program is to reduce unit costs of goods sold. Therefore, planned maintenance helps the manufacturer do this by getting the maximum use from his equipment.

DAVIS
PLASTIGLAS
HEDGARD



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LOCK CLIP
HEAD CRADLE

—cradles the head in safety... and comfort!

Both are important to effective protection—if the safety hat is comfortable the men will wear it. That's why Davis Hedgard is designed to give the utmost in both safety and comfort!

The new 6-point suspension head cradle, in genuine leather or leatherette, is easily adjusted to fit any head. Can be removed or replaced in 30 seconds. Stainless steel lock clips never rust.

You get *all* these protective features with Davis Hedgard:

- Withstands impact of over 40 ft.-lbs.
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- Will not crack or break when dropped.
- Broad back brim protects against sun and rain.
- Moisture-proof.
- Crown and suspension "give" to reduce shock. Cradle spreads shock of blow on side of head.
- Air circulation between cradle and crown keeps head cool under hot sun.

Send for illustrated Bulletin 1407 with complete details.

SAFETY DAVIS DIVISION
DAVIS EMERGENCY EQUIPMENT CO., INC.
64 Halleck Street, Newark 4, N. J.

(For details, use Key # G-15 on card on page 55)

Production Engineering Show

A NEW INDUSTRIAL exposition, the Production Engineering Show, will be launched in Chicago next September to coincide with the Machine Tool Show. Managed by Clapp & Poliak, Inc., both shows will take place from September 6 to 17, inclusive. The Production Engineering Show will be held at Navy Pier and the Machine Tool Show at the International Amphitheatre.

The Production Engineering Show, which will cover the new field of automation, will be held annually. It will cover 200,000 square feet of display space and the number of exhibitors is expected to total 225. Automatic mechanisms and techniques for manufacturing and processing industries will be demonstrated. Principal categories of equipment to be exhibited will be monitoring equipment, such as recording devices and controls, counters and computers; inspection and gauging equipment; communication equipment, including signals and telephone, industrial television, radio, teleprinter and facsimile; materials handling equipment, such as conveyors, hoists, monorails, positioners, rotators, loaders, unloaders, and pneumatic tubes; equipment components, such as cylinders, activators, brakes, clutches, drive mechanisms and motors; machine and product safeguards, such as x-rays, photocells, limit switches and governors, and tramp iron removers; and special production equipment, such as continuous heat treaters, drying furnaces and ovens, abrasive blasters and other finishing equipment, engineered paint systems, and weighing and proportioning equipment.

Advance registration cards may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

Air Conditioning Show

THE NINTH exposition of the air conditioning and refrigeration industry will be the largest in the history of the show, it was announced by F. G. Coggin, chairman of the exposition committee. Sponsored by the Air Conditioning & Refrigeration Institute, Washington, D. C., the show will be held in the Auditorium, Atlantic City, N. J., Nov. 28 to Dec. 1.

More than 200 companies already have contracted for exhibit space and present indications are that it will be more than one-third larger than the last previous show held in Cleveland in 1953. Five national groups will hold their conventions concurrently with the show. These include the Refrigeration Service Engineers Society, Air Conditioning and Refrigeration Wholesalers, National Commercial Refrigeration Sales Assn., American Society of Refrigerating Engineers, and Refrigeration and Air Conditioning Contractors Assn.

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ALL NEOPRENE GLOVES

These two new all-neoprene top quality gloves offer a real bonus in job efficiency and economy, through extra long life and superior protection. One is solid black for general use; the other truly white for food processing and sanitary purposes. Both have red inner lining and red roll at the cuff; and both have plus qualities in hand comfort, flexibility and touch sensitivity.

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BUY ONLY THE VERY FINEST

BUY "CHARCO"

ON THE USE AND PERFORMANCE OF CHARCO PRODUCTS DEPENDS OUR REPUTATION—AND THE SAFETY OF THOSE WHO USE THEM.

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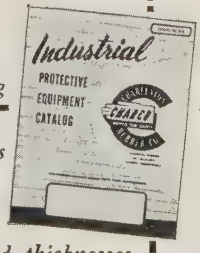
Write today for our new 28 page catalog with chemical reference charts and glove selector guide.



Gloves are available in a complete range of sizes, lengths and thicknesses

CHARLESTON RUBBER COMPANY

31 STARK INDUSTRIAL PARK CHARLESTON, SOUTH CAROLINA

(For details, use Key # G-16 on card on page 55)

industrial hygiene

Results of Smog Research

COMPLETING THE FIRST full year of an intensive research program that utilized the laboratories and services of some of the nation's top scientists and spanned a continent, the Air Pollution Foundation has been strengthening and consolidating its scientific front in the battle against smog.

The reorganization of forces, it was explained by Dr. W. L. Faith, vice president and chief engineer of the Foundation, is in preparation for even more widespread smog investigations in the months ahead.

The independent, nonprofit organization has reduced the number of its active research studies from 46 to 34. In the last year, he said that 31 air pollution projects of varying degrees of importance have been completed, and that by the end of 1955 the Foundation will have expended more than $1,250,000 on scientific studies.

The completed projects include the catalytic converter, which cannot yet be recommended as a potential smog eliminator for public adoption; plant damage studies; projects for measuring hydrocarbons and oxidants in the air; studies of refinery emissions, aldehydes, and other gases; and the development of a number of new scientific tools to lick smog.

"Active smog projects currently under way in the Foundation's newly consolidated program may be divided into three classifications," Dr. Faith declared. "These seek to find the answers to (1) What is smog?, (2) What causes smog?, and (3) How may smog be eliminated?

"All of the studies specifically are pointed toward helping to solve these simple-sounding but very complex questions. In order to expedite our research we have tried to procure the best scientific brains and the best equipped scientific laboratories in the country.

"Probably our outstanding accomplishment to date has been the aerometric survey, made in 1954 with funds provided by the Los Angeles Board of Supervisors. We are still working on this important project which had for its purpose the measuring in the Los Angeles basin of pollutants, reaction products, and other factors in the atmosphere which, separately or in combination, may be responsible for smog.

"Preliminary results from this study suggest several things. For example, the figures indicate that smog formation occurs widely throughout the basin and that the pollutants probably result from widespread human activity. Samples taken in the upper air by a U. S. Navy blimp during this study show that gaseous pollutants are pretty well confined below the temperature inversion that prevents our smog from being dissipated into the desert."

Dr. Faith said that a Visibility Study also added materially to the Foundation's knowledge of smog. This project is primarily a study of U. S. Weather Bureau data on visibility over the past 20 years. He said that a report to be published about August 15 will indicate, among other data, the number of days in the last two decades when visibility was less than 12 miles, as well as the times when it was less than one mile.

What Is Smog?

The Air Tracer Study indicates that current methods used by meteorologists in tracking the movement of air throughout the basin must be used with caution, since apparently the methods are not adequate under all conditions.

The Foundation's solar radiation by wavelength study at Washington, D. C. has indicated that the main difference between smoggy and normal air is a higher concentration of nitrogen oxides.

Studies of infrared solar radiation absorption by smog, conducted by personnel of the University of Denver, showed a higher hydrocarbon content in smoggy air than in normal air. Along with this, it was found that much sharper tools to measure smog are needed than are presently available. *(Continued on page 39)*

DUST & FUME CONTROL SERIES
next article in August

Where Do

For many years New York state industrial codes have required that plans and specifications for exhaust systems be submitted for approval before installation. The value of this regulation has been demonstrated in a recent compilation of criticisms of 1175 exhaust system plans.

The Engineering Unit of the state Division of Industrial Hygiene which examines such plans consists of 11 engineers with a total of 115 years of industrial hygiene experience. The designer submitting his plans and the company involved benefit from this large reservoir of experience in monetary as well as in safety terms.

In 5 months the total of 1175 exhaust system plans were acted upon. Sixteen percent were disapproved altogether, 17 percent were approved with corrections and additions and the remaining 67 percent were approved as submitted. From this it is obvious that the engineering unit attempts to criticise the plans so that they may be corrected and achieve final approval. Two hundred of the plans submitted could have been disapproved; but, after consultation with the company or engineer filing the plan were approved with additions or corrections.

The accompanying table (page 37) shows the number of criticisms under each main category. Since many of the plans required more than one item of criticism, the total of the plans criticised is considerably less than the total of criticisms.

Some Were Totally Inadequate

The first item of the listing, "totally inadequate plan" shows that 74 plans were so bad that they were merely classified under this heading without being broken down into the various classifications of design faults.

The most frequent criticism has to do with construction specifications. The New York codes contain definite rules for construction of exhaust systems that are designed to assure that the system installed is safe, will retain its usefulness for a reasonable time, and have reasonable facilities for service and maintenance. In this regard, you will notice that 83 of the plans were approved even though construction specifications were not included or were not correct. This is explained by the fact that such specifications were added as part of the approval and thus became part of the plan.

It is enlightening to note that "hood design" is the second greatest cause of criticism. Much more emphasis must be placed on the need for proper hood design. The hood in an exhaust system actually contains and holds the contaminant and allows it to be controlled. A good hood will control with a minimum of air. A poor hood may not control at all. It is an economic waste to design or put in exhaust systems with expensive piping, fans, and collectors, if the hood at the source of the dust, gas, or fume is not designed to control the contaminant properly.

The third item in the table, "discharge," shows the natural trend of the times for cleaner atmospheres. People no longer accept with complacency the fact that industrial plants spill forth vast quantities of contaminants into the outside air. This trend has produced air pollution legislation to protect the population from the smoke nuisance. Even from a strictly selfish viewpoint, it doesn't make much sense for a plant to spend money to remove an airborne contaminant from one section of the factory only to have it spill back into another section, or even the same section, due to faulty discharge location.

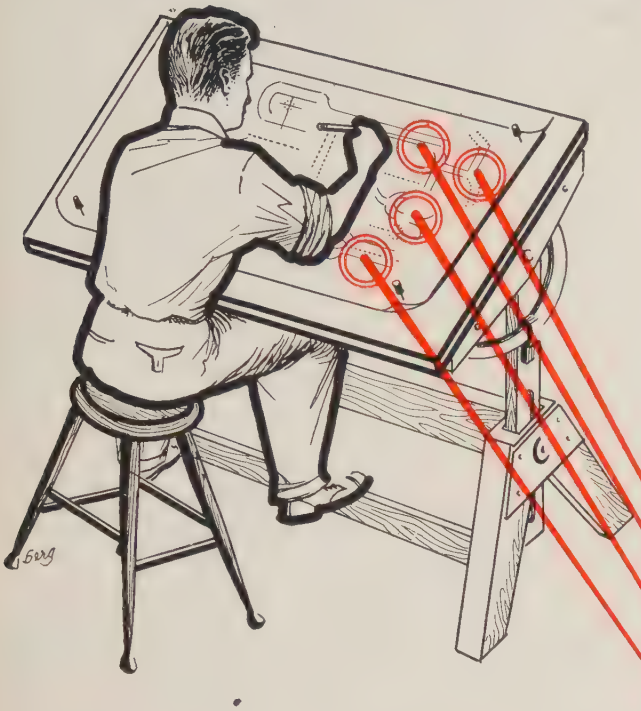
Not Just "Any" Fan Will Do

It is unfortunate that some people designing exhaust systems still do not realize that just any "fan" (the next item on the table) may not be the right fan for a particular job. Fans vary widely in their characteristics and it is important that the proper one be specified for a particular job. For example, a system designed to remove heavy dust cannot use a fan which is suitable for a paint spray booth or for the removal of gaseous contaminants. It should be obvious, but unfortunately it does not always seem so, that a fan designed to circulate air in a room cannot be used in an exhaust system with the resistance of piping. The fan can be called the heart of the exhaust system. It is the pump which causes the air to flow through the system. If the fan cannot move the required amount of air against the resistance of the system, the system cannot function as intended and is therefore a complete economic waste.

The next most frequent criticism is "piping design." Pipe is needed to contain the contaminated air and provide a path for it to be removed from the workroom. Piping can be considered the arteries of the exhaust system just as the fan is called the heart. If it is too small in diameter, or is excessively long, the strain put upon the fan may be too great to provide the required volume of air. This heading also includes improper location and layout of the piping system as well as improper sizing of the piping, since they all have a serious effect on the overall resistance of the system.

Following closely behind piping, in number of criticisms is "air volume." In an exhaust system it is not the fan, the piping or the hood that removes the contaminant—it is the air exhausted from the system. A

Exhaust System Plans Go Wrong?



by **JACK BALIFF**

Senior Industrial Hygiene Engineer
Division of Industrial Hygiene
New York State Department of Labor

CRITICISMS OF 1175 EXHAUST SYSTEM PLANS

Nature of criticism	Plans criticised	Approved with criticism	Disapproved
Totally inadequate	74	—	74
Construction specs.	151	83	68
Hood design	106	49	57
Discharge	83	53	30
Fan type	75	26	49
Piping design	66	24	42
Air volume	63	12	51
Motor size	55	23	32
Fan speed	54	30	24
Fan size	51	14	37
Design basis	46	27	19
Collector	42	16	26
Elbows & fittings	38	14	24
Make-up air	30	19	11
Fire & explosion	26	13	13
Recirculation	13	4	9
System installed	72	32	40

certain minimum air volume must then be present to remove contaminants from the place where they are generated or used. This whole problem is tied in very closely with hood design, since a good hood will achieve control with less air than a poor hood.

New York's general dust code does not specify minimum air volumes. It does, however, specify minimum branch pipe sizes and 2 inches of static suction in the branch pipe behind the hood for grinding, buffing, polishing, and woodworking systems. For the average grinding hood, 2 inches of static suction corresponds to a velocity of 4000 feet per minute. Thus, when the branch pipe is specified with a branch velocity of 4000 feet per minute, the air volume to be exhausted is determined as the product of the pipe area and the velocity, according to the basic equation: $Q = AV$.

The next 3 items on the criticism list are almost equal in number. They are "motor size," "fan speed," and "fan size." If the fan has been selected at the wrong speed or is the wrong size, the motor horsepower specified will usually be wrong. The correlation between fan and motor is very important. It requires work to move the necessary volume of air against the system resistance. This work is provided by the fan motor. If the fan speed or size for any system is changed, horsepower requirements must also be changed. Without getting into a discussion of the fan laws, it can be briefly stated that for a given piping and fan system a change in fan speed changes the quantity or volume of air directly as the speed ratio and at the same time changes the horsepower needed according to the cube of the speed ratio. This fundamental fact is often overlooked. Too often plants will attempt to get more air by speeding up the fan and end up by burning out the fan motor.

The next most frequent item of criticism is not actually an engineering criticism. The fact that the designer used the wrong state code or the wrong basis for design can only be overcome by more education.

Collectors Are Usually Adequate

It is encouraging that the item "collectors" required as little criticism as it did. Industry seems aware that it is no longer possible to pollute the air as indiscriminately as in the past, and is designing exhaust systems with reasonably adequate dust collection devices. This category includes not only fundamental design of collectors, but also collector size, refuse bin design and

size, and methods of removing collected material without providing a secondary nuisance.

This study shows that a small number of plans were criticized because of fire and explosion hazard. This is a serious problem even though the number of criticisms is small because of the possible loss of life and serious property damage from fire and explosions. Unfortunately, many industrial processes by their very nature constitute a fire or explosion hazard as well as a health hazard. In that case, the 2 hazards must be considered together in the design of exhaust systems.

The most serious criticism found by this survey is not of an engineering nature. This is the fact that of the 388 plans which needed correction 72 had already been installed. These 72 systems represent unnecessary waste of money. Forty of these systems were disapproved altogether, which means that frequently the entire cost of the exhaust system was wasted. It is easier and far cheaper to change a system in the blueprint stage than after it is installed in the factory. An eraser costs a lot less than new piping, new hoods, new fans and new collectors. What is even more important than the monetary loss to the companies which installed incorrectly designed systems is the fact that the workers in these plants may not have been properly protected against the hazards these systems were thought to control.

The New York Industrial Hygiene Division makes available engineering plates on various phases of the design of exhaust systems free of charge to industries in the state, in order to keep them up to date on the latest developments in design.

As shown in this study then, the most frequently made design errors in exhaust systems are in hood design, fan selection and piping design, as well as in construction specifications.

Furnace Gas Control

New progress in controlling gases given off by open hearth steelmaking furnaces was reported by Dr. Leslie Silverman, Associate Professor of Industrial Hygiene Engineering, Harvard School of Public Health, Department of Industrial Hygiene, at the General Meeting of the American Iron and Steel Institute recently in New York. Dr. Silverman indicated the magnitude and scope of the open hearth gas cleaning problem, and described some of the developments undertaken at Harvard under the sponsorship of American Iron and Steel Institute.

He reported that experiments on moving filters of slag wool together with rotating screw units have shown great promise in reducing air pollution by open hearth gases, and expressed the belief that further study would develop units of practical size and cost. The speaker pointed out that efficiency and economy are major considerations.

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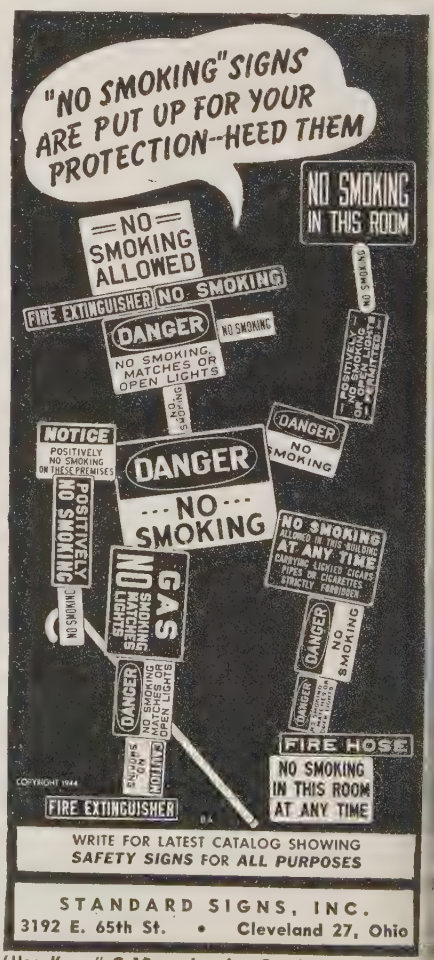
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Results of Smog Research

(Continued from page 35)

Projects to develop and adapt these new tools include a study of microwave spectra for identification of smog constituents; use of the ozone measuring instruments; paramagnetic resonance studies and the particle counter for aerosols research.

Photochemical studies are searching out the answers to just how hydrocarbons and oxides of nitrogen react in the air to form ozone. Under review is the great body of past chemical history in an effort to find leads to the photochemical changes that take place in polluted atmospheres. Another important study is the investigation into carbon isotopes. It is hoped this study will indicate the relative occurrence of carbonaceous materal from petroleum as against carbonaceous material from the burning of trash.

Projects being pursued in the "What causes smog?" classification, Dr. Faith said, obviously include those already mentioned and also numerous other projects. Among these, the smog forming reactions project is seeking direct identification of the substances that form smog. Researchers are irradiating polluted night air under controlled conditions, and determining its oxidant content, plant damaging effects, eye-irritating and visibility reduction properties. When this is determined, hydrocarbons and other materials will be added to this air to ascertain how it is affected.

The Foundation is sponsoring a project to determine what portion of automobile exhaust is responsible for smog characteristics, and the effect of different engine operating conditions. Also being studied is the effect of alcohol-gasoline mixtures on auto exhausts.

A project seeking to learn the composition of effluents from backyard incinerators is expected to determine just exactly what contaminants enter the air from this source.

Dr. Faith pointed out that it is impossible completely to eliminate smog until science ascertains exactly what smog is and what causes it.

"In the interim, our program in this direction has been aimed at elimination of major air pollutants," he said.

We are studying the economical and technical feasibility of automobile control devices, as well as the economic feasibility of other automotive fuels such as liquefied petroleum gas, ethyl alcohol, and white gasoline.

"As information develops from the projects the Foundation now has under way across the country, it will give our scientific team additional leads that will enable them to drop some of the studies that are not providing us with a maximum of facts concerning various facets of the smog problem.

"These leads will suggest new studies in wider areas —until in the end we shall arrive at the answers we seek and smog as a major problem will have been relegated to the science textbooks."

The Contaminated Clinic

A STUDY OF LONG-TERM exposure to radiation was made possible when an unusual health problem arose recently as the radium therapy clinic in Baltimore prepared to move to new quarters, it was revealed in a report presented to the American Industrial Hygiene Association at the Industrial Health Conference in Buffalo.

The report of the Baltimore study was prepared and presented by Henry N. Doyle, Chief of the Occupational Health Program, U. S. Public Health Service, of Washington, D. C., and C. E. Couchman, Director of Industrial Hygiene, Baltimore City Health Department, Baltimore, Maryland, both of whom participated in the unique research.

"The Baltimore Clinic, organized in 1904, indirectly played an important role in the development of atomic energy, as material from it was used in the early work leading to the discovery of the neutron," the report begins. "In 1914 the Clinic started a radon emanation and purification plant to prepare radon applicators for therapeutic use. At that time the health hazards associated with radium were not fully appreciated. One and possibly two radon pumpers died from aplastic anemia, and a radiochemist had a near fatal attack.

The Clinic was located in a converted three story brick building. At one time an adjacent building was used as a hospital. Behind and connected to the main building was a wooden structure containing laboratories, and an elevated brick vault in the back-garden housed a radon emanation plant. In recent years, two fires gutted the wooden structure, one severely damaging the main building.

Contamination Survey

A radiation contamination study was made of these premises with instruments sensitive to alpha, beta, and gamma radiation. The survey, according to the report, found alpha emitting materials throughout the Clinic.

"In several locations the alpha contamination, resulting from long use, was truly astounding," the report continues. "Counts as high as 30 million disintegrations per minute were recorded. This is in marked contrast to the recommended permissible level. Air samples taken in the capsule preparation room contained approximately seven times the currently recommended maximum permissible concentration for radium and its decay products. Fixtures, floors, and other exposed surfaces were monitored and were found to be contaminated with radioactive material. In the burned area of the building radium contamination appeared to have been spread by water during the fire fighting and as the result of subsequent traffic. The drains of several sinks, including that in the dining room, contained radioactivity. Even the adjacent building which had been abandoned as a hospital 15 years earlier was found contaminated."

To what extent were the employees affected by this contamination? Over the years the Clinic had employed hundreds of persons and at the time of the examination 11 people were working part or full time. Only four of the former employees, however, came to be examined, and six of the presently employed. The report states that six of the 10 examined showed evidence of physical change, some of which could be attributed to radiation.

"There is no way of predicting the possible long-term effects on the individual," the report points out, "but it is obvious that, in those six cases where physical changes were found, future radiation exposure should be minimized."

Precautionary Measures

As the result of the study the report recommends, among other precautionary measures, that the radiation therapy clinics be designed to provide maximum protection against air and surface radioactive contamination; that fire officials be informed in advance of the location of establishments using radioactive isotopes so that proper fire fighting techniques can be used when needed. Furthermore, personnel radiation monitoring should be maintained and evaluated, and whenever excessive exposure is detected, proper medical examination should be performed.

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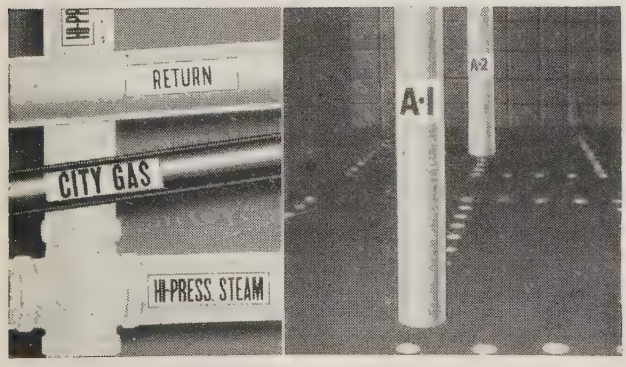

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(Use Key # G-27 on Inquiry Card on page 551)

You Can't Count on Thirst!

by **ROSLYN WILLETT**
Paper Cup and Container Institute, Inc.

WORKERS MUST DRINK measured amounts of water all day long if they're to prevent fatigue. That's one of the conclusions of a recent study of physical fatigue by Dr. Lucien Brouha of du Pont's Haskell Laboratory of Toxicology in the plants of the Aluminum Company of Canada.

Until now, most people have believed that it was not necessary to "force" water; that when the body needed water, it used the signal of thirst. This is true, but there's a time lag. Ordinary thirst does not cause the body to catch up on its water supply quickly enough to maintain top efficiency. In fact, Dr. Brouha found that a worker who is sweating profusely will make up only about two-thirds of the amount he loses on an hourly basis.

The number of cups of water needed by each worker can be determined experimentally by studying the average weight lost by workers in various jobs. In heavy jobs, 12 quarts of water or more can be lost from sweating during 8 hours of work. Even sedentary workers in air conditioned offices lose about a quart of water a day through perspiration. All workers will suffer more from fatigue and a drop in on-the-job efficiency if they do not make up water losses immediately.

How It Works

The way it works is this: As the worker does his job, his muscular exertions produce heat which must be dissipated. His body perspires to cool off, and he loses moisture. If his water supplies are not replenished continuously before he feels thirsty, (when they're distinctly depleted), his heart rate and temperature go up. As his temperature goes up, the effects of fatigue become progressive and cumulative. The increase in temperature increases the rate of chemical reactions in his body, producing more fatigue products. The heart has to beat faster to pump the blood around to pick up the increased load. And the body perspires more in an effort to cool off.

Work Load, Heart Rate and Fatigue

In his study of muscular fatigue, Dr. Brouha found that the heavier the work load, the higher the heart rate and the more slowly the heart returns to a normal rate. He also learned that the better the physical condition of the individual, the smaller is the increase in heart rate for a standard work load, and the more quickly the worker recovers to normal. When there is no recovery between work loads, the pulse rate becomes higher and higher and the heart rate remains at a high level longer, so that by the end of the working period both are much higher than at the beginning.

The relations between fatigue and water intake showed up this way: When drinking was insufficient to replace the water loss (proved by the fact that workers weighed considerably less at the end of the shift) high heart rates and body temperatures of 100 degrees were frequent. When more water was drunk, body temperatures of more than 100 degrees disappeared, and heart rates did not go so high or take so long to return to normal.

With increased measured water consumption—and all other factors constant—it was found that heart rates at the end of the day were approximately the same or only slightly higher than at the beginning of the day's

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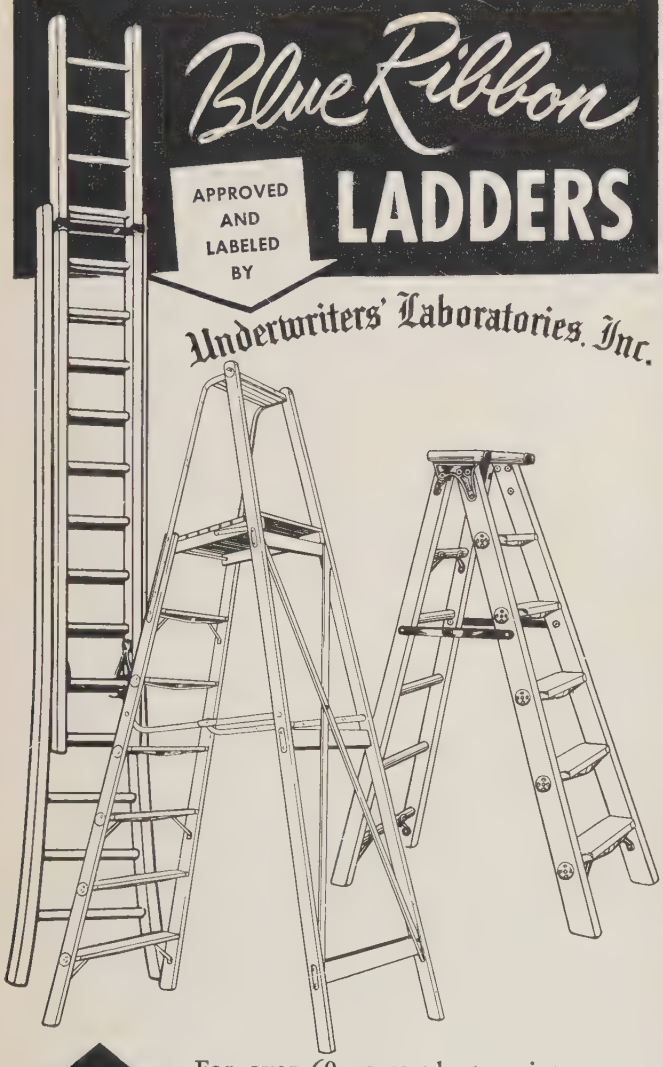

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work, and that body temperatures were stable. In other words, the body was not subjected to increased stress during the day.

Of course, other physical factors enter into fatigue. These include sex, age, the state of nutrition and exposure to certain chemicals. In addition there are other environmental factors such as noise, dust, etc., and sometimes individual psychological factors, but these do not lend themselves so readily to measurement or to plant measures for combatting them.

Dr. Brouha points out that the best practical technique for measuring amounts of water consumed "is to provide paper cups near each drinking fountain, and to explain to the workers that in order to replace the amount of sweat lost, they should drink an average of so many cups at the end of each work period. The men learn rapidly how to force their water intake to compensate more accurately for their sweat loss."

Dr. Brouha says workers will drink water if they're educated to its importance. He suggests that after tests are run, management simplify the results and tell the workers what they were.

Picture by courtesy of Field Research Division, Paper Cup and Container Institute, Inc.

Fatigue Reduction Methods

1. Reduce the work load: some of the work "load" does not result in work "done." In other words a job can frequently be done with much less effort if the position in which it is done is made less awkward, etc.

2. Reduce the heat load: high temperature and humidity and poor circulation of air increase the body's stress. Reduce the temperature with adequate ventilation, insulate sources of heat, protect workers with screens or special clothing, and develop tools and methods which take workers away from sources of heat.

3. Organize adequate rest periods: this is done by trial and error by the plant physician, and the industrial engineer. The period must be such that workers have time for nearly complete recovery so that they may remain in good physical condition all day. Workers cannot recover while resting in a hot environment, and it may be economically wise to have the resting place air-conditioned.

4. Enough men to do the job: A job may be done by a minimal team, but in terms of stress to the individual, length of rest periods necessary, and perhaps total production, it may be wiser to add men to the team.

5. Increase water consumption: water intake must be spread evenly through the day rather than in large volumes 2 or 3 times a day. The latter is simply not effective in helping reduce fatigue during working hours. The usual method is for workers to suck water up from a bubbler until thirst is quenched. There are two adverse effects from this method. First, the person doesn't get the required amount of water and secondly, by drinking out of cups much less air is swallowed than when drinking directly from the fountain. This technique has eliminated almost completely complaints of stomach distress which often follow the absorption of cold water in which quantities of air are mixed.

Temporary Disabilities

by **ESTHER F. RAMSAY, R.N.,** Industrial Nurse
Sinclair Refining Co., East Chicago, Ind.

DAILY THE RESPONSIBILITIES of the industrial nurse are extending far beyond the prescribed limits of a short time ago. Take the question of medical absenteeism. First of all, how much control can we actually have over absenteeism? Certainly medical absenteeism isn't something that can ever be completely eliminated. It is inevitable, but we are not prepared to say what percentage is actually inevitable. There is to be considered—first the seasonal changes.

What can be done further to control the upper respiratory infections and to some extent the gastro enteritis complaints will remain to be seen—but in the meantime we recognize that we will be subjected to various seasonal changes in the absentee problem.

Further we have the question of age or average age of employees and the onset of debilitating diseases. These are peculiar to the seniority of the employees of individual companies but we must recognize that with advancing age we have inevitable debilitating disease.

In this general classification we must mention malingering. How much absenteeism is actually malingering? Not as much, in most cases as is implied. This problem is an individual one.

How much do we have to do with temporary disability or medical absenteeism? First we have medical absenteeism of occupational origin. The industrial nurse has continuous contact during such cases. There is the correspondence relative to the compensation claim, contact for treatments and dressings. Perhaps we take the patient to the doctor periodically or see the patient in the first aid department.

In some cases there seems to be less "enthusiasm" on the part of the occupationally injured employee than on the part of the non-occupational medical absentee for an early return to work. This is certainly not true of all cases, but in the few instances where it occurs we have an opportunity to exert a subtle influence on the employee by improving his mental outlook where possible.

What are our contacts with the non-occupational medical absentee? This involves a review of our present policies and practices and our existing administrative standards. Is the medical absentee problem handled by the medical department and to what extent? Perhaps we see the medical absentee or contact him when he reports off work, perhaps when he returns, or both. Must our medical absentee be under the care of a physician and present evidence to this effect? Many of the sick benefit plans or health and accident insurance policies in industry require that the employee indicate that he has been under medical care if his absence extends beyond a specific period of time.

The advantages of having medical absenteeism handled by a medical staff representative rather than some other member of the industrial relations, personnel or supervisory staff, are self-evident:

1. There is a greater continuity in the work and in the over-all picture of the employee's medical history.
2. There is a better understanding of the symptoms and the patient's condition on the part of medically trained personnel.
3. In the matter of case finding, both from an occupational disease standpoint and from the standpoint of chronic debilitating diseases, we have a by-product that is only possible when there is a medically trained representative checking and recording these lost time cases.

It is in the role of case finder that we can perform a satisfactory service in discovering the onset of the debilitating disease and by prompt advice prevent or postpone the total disability which will almost invariably follow in cardiac cases and hypertension.

Further, as a case finder the nurse can become suspicious of the chronic absentee who seems to suffer from general malaise and possible anemia. With an eye to checking the occupational disease hazard and the onset of an occupational disease, some diagnostic examinations can be recommended, whatever your occupational disease hazard may be.

At this point a word might be said regarding the neuropsychiatric patients. There is a definite increase in their number. Whether it means that there is really an increasing number of cases or just an increasing number of incidents of successful case finding is probably debatable. We believe that the neuropsychiatric absentee requires a special type handling particularly during his rehabilitation period.

(To be continued in the August issue.)

American Heart Association Meeting

THE 31st ANNUAL MEETING and 28th Scientific Sessions of the American Heart Association will be held at the Hotel Jung in New Orleans, October 22–26, it was announced by Dr. E. Cowles Andrus, President of the Association. The 1955 meetings will be the first held by the Heart Association independently of any other major medical meeting.

Representatives of 56 affiliated Heart Associations and more than 350 chapters throughout the United States, Alaska, Hawaii and Puerto Rico will attend, along with leading medical scientists in the fields of research and treatment of heart and blook vessel diseases. Special exhibits will be among the new features and a film program is also planned.

Included on the agenda of the Annual Meeting will be the election of national officers and board members, and panel discussions dealing with every phase of the Association's research, education and community service programs in the fight against cardiovascular diseases. The Scientific Sessions will be devoted to the presentation of papers and to the exchange of the latest information on heart and blood vessel diseases.

These sessions are under the sponsorship of the specialized sections of the Association's Scientific Council, including the Section on Basic Science, the Section on Cardiovascular Surgery, the Section on Clinical Cardiology, the Section on Circulation, the Council for High Blood Pressure Research and the Council on Rheumatic Fever and Congenital Heart Disease. A special program featuring discussions of rehabilitation and nutrition will be given under the auspices of the Association's Council on Community Service and Education.

Public Health Meeting

A FIVE-DAY analysis of present trends and future directions of public health in the light of changing world conditions is scheduled for the 83rd Annual Meeting of the American Public Health Association and 40 related organizations in the Kansas City, Missouri, Muncipal Auditorium November 14–18.

More than 5,000 public health workers from all parts of the free world are expected to attend. Representing city, county, state, national and international agencies as well as voluntary health organizations and institutions, they will include physicians, dentists, nurses, engineers, statisticians, veterinarians, sanitarians, nutritionists, health educators, entomologists, biologists and other specialists concerned with disease prevention and health protection.

The topic of an opening general assembly, "Where are we going in public health?" will also be the theme of the entire meeting, according to Dr. Reginald M.

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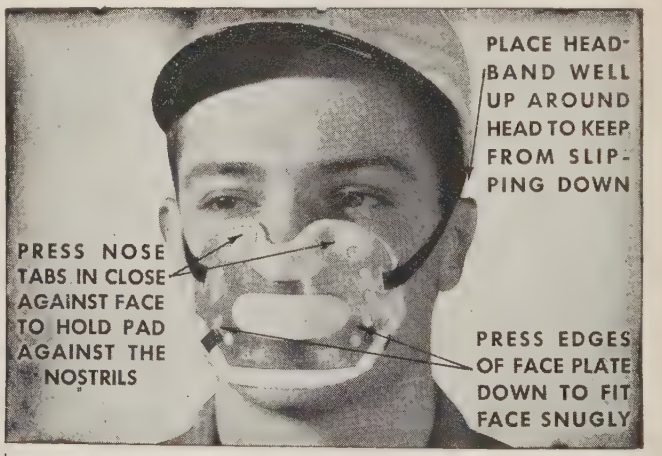
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Atwater, executive secretary of the Association. This assembly will deal with changing factors such as population redistribution, increased mobility of people and increase in the aged population, all of which affect public health needs. Outstanding authorities from outside the health field are being invited to participate.

In all, 400 scientific papers will be presented during 75 sessions, according to Dr. Atwater. Some sessions will be devoted to subjects of particular interest to specialized profession fields. Others will deal with subjects which cut across the lines of several specialties, including tuberculosis control, neighborhood planning, meeting public health manpower needs, new approaches to chronic disease programs in public health, accidental poisoning, sanitation for industrial workers, environmental standards for school health, examination of water and sewage, advancing knowledge of virus diseases, international maternal and child health, and the use of mass media in health education.

In a closing assembly, representatives of the Association's thirteen specialized sections will summarize the week's discussions in an effort to evaluate present public health activities and to draw implications as to future program patterns.

Supplementing the meetings will be a week-long scientific and technical exhibit by governmental agencies as well as private firms whose products or services have health importance.

Carbon Tetrachloride Hazards

With at least 20 workers killed by carbon tetrachloride in the last few years in California, and 200 disabled by it, the California State Division of Industrial Safety is stepping up its continuing educational campaign on the hazards of the solvent.

There are undoubtedly many unreported casualties from Carbon Tet, which is one of the most harmful of the common solvents. Most injuries are caused by breathing the vapors, which can produce severe and even fatal damage to the kidneys and liver.

One part of Carbon Tet in 40,000 parts of air is the maximum allowable concentration now allowed by California Safety Orders. It is the equivalent of turning into vapor one-half a teaspoonful of Carbon Tet in a room 10 feet long, 10 feet wide, and 10 feet high.

Because of the greater recognition of the solvent's dangers, the Safety Orders now require a "Danger" label on containers, with a warning that includes the statement that Carbon Tet is a hazardous vapor and liquid, and that it may be fatal if inhaled or swallowed.

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(Use Key # G-24 on Inquiry Card on page 55)

WHAT'S THE LAW?

Edited by HENRY M. GROSSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
. . . . . Newark, N. J.

MONILIASIS—Contraction as Accident

An employee who claimed that he contracted moniliasis, a yeast infection of the lungs, while working as a carpenter in a lumber yard in contact with old, moldy lumber, was denied compensation on the ground that he had not suffered an accident within the meaning of the Compensation Act. The court noted that there was no distinct event which could be termed an accident. The fact that the disease caused violence to the physical structure of the body does not make the disease an accident within the meaning of the Compensation Law.

It should be borne in mind, however, that in the majority of states, at the present time, a condition as described above, would be compensable under the Occupational Disease Statutes. Those states do not require an accident, but only an exposure to the condition that caused the disease.

POWELL vs. TAYLOR Pennsylvania Superior Court Scranton District. No. 1. March 24, 1955.

ASTHMA—Causal Employment Connection

Compensation for asthma was denied an employee when he failed to show that the condition would not have developed except through his employment. The employee testified that he was allergic to all kinds of dust. The doctor who testified on his behalf stated that there was a causal connection between the employee's job, unloading logs, and the asthma. However, the Court found the doctor had not been informed that the employee was allergic to all forms of dust, not only to wood dust, and concluded that a medical opinion based upon such incomplete information could not establish a causal connection between the employment and the disability.

PARR vs. THE DEPARTMENT OF LABOR & INDUSTRIES Washington Supreme Court. No. 33,053. Jan. 8, 1955.

CEREBRAL HEMORRHAGE—from Employment

Recovery was denied for the death of an employee who suffered a cerebral hemorrhage when he fainted and struck his head. The Court found that the cause of the faint did not arise from his employment. The employee was susceptible to heat and the faint which caused his death occurred on a very warm night while he was working in a grocery store. The reason proffered by the claimant as the cause of the faint was a matter of medical opinion, and since there was no showing that a particular activity in the decedent's work caused him to faint,

the court denied recovery. In so doing, the court refused to follow cases allowing compensation for idiopathic falls to a level floor where there was no showing that the employment contributed to the fall in any real sense.

DUSTIN vs. LEWIS New Hampshire Supreme Court., No. 4371. March 11, 1955.

It is interesting to note that the New Jersey Courts have held that where a petitioner in an idiopathic fall strikes any object and is injured, it is a compensable injury, but makes a distinction where the employee strikes only the floor and is injured, holding the latter case to be non-compensable. The reasoning being that any other objects struck during the fall would be considered hazards of the employment, while the floor or ground would not be so considered.

NOTE: The following states have recently increased Workmen's Compensation benefits to the employee by newly enacted statutes:—Arizona, Colorado, Iowa, Kansas, Minnesota and New Hampshire.

Genesee Valley Conference

THE FIRST Genesee Valley Safety Conference was held in Rochester, N. Y., on May 22, 23, and 24, 1956, according to William J. Enders, president of the conference organization. The three-day meeting had sessions on various phases of industrial, traffic, commercial carrier, and school safety, and fire prevention. A safety exhibit, planned for the Rochester Chamber of Commerce building where most conference activity will center, will have an estimated 50 booths showing safety equipment and educational material.

Newly-formed G.V.S.C.I.

Sponsorship of the conference is in the hands of Genesee Valley Safety Conference, Inc., a newly-formed, non-profit organization. It represents the supporting interest of the Rochester Safety Council of the Rochester Chamber of Commerce, the Genesee Valley Chapter, American Society of Safety Engineers, and the Rochester Industrial Management Council.

Enders, who heads the list of officers and directors, is in charge of ground safety for civilian personnel at Sampson Air Force Base. The others are: vice-president, William C. Kullick, safety director for DuPont in Rochester; and secretary-treasurer, William H. Keeler, director of the Rochester Safety Council.

It is planned to conduct the Genesee Valley Conference every third year, Enders said. This triennial schedule will aid coordination with Syracuse and Buffalo groups that have been holding biennial conferences.

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FOG-PROOF, GAS-TIGHT GOGGLES
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"Respirators for Industry since 1894"
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If management has been wise, a fire tragedy will be stopped before it starts...if not, in 20 minutes extensive destruction and total loss could readily be the result.

First-rate fire protection is essential to the continued success of any business. With C-O-TWO Smoke or Heat Fire Detecting Systems, plus C-O-TWO High Pressure or Low Pressure Carbon Dioxide Type Fire Extinguishing Systems, as well as PYRENE Air Foam Type Fire Extinguishing Systems for specific outdoor locations, your plant can have fast, positive round-the-clock fire watchman service simultaneously at each fire hazard point . . . a fire tragedy is stopped before it starts.

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(For details, use Key # G-26 on card on page 55)

The Fire Front

The Shady Side of Fire Protection

TOP FIRE protection authority has warned against the rash of "crooks" and "shady operators" who are taking advantage of the public's increasing awareness of the personal threat of fire. Percy Bugbee, general manager of the National Fire Protection Association, said that "in its eagerness to be protected against the ravages of fire, the public can be defrauded by the downright crooks and it can also be persuaded to buy ineffective fire alarm and fire extinguishing equipment by either the shady operator or the well-meaning but misguided amateur."

Speaking before the association's 59th Annual Meeting, Mr. Bugbee told of the increasing number of reports from both Canada and the United States on the sale of undependable home fire alarms and worthless, sometimes even dangerous fire extinguishers.

"In most cases," he said, "these unprincipled salesmen are frightening people into buying their fraudulent wares by showing them horrible pictures of fire destruction and charred bodies."

Aircraft Crash Fires

KNOWING THE RIGHT way to get out of an airliner within seconds after a crash could mean the difference between life and death for anyone who flies. Pilots of the principal scheduled airlines have pledged a stepped-up effort to educate the flying public in emergency evacuation procedures, Theodore G. Linnert, a commercial airline pilot and head of the Engineering and Air Safety Department of the Air Line Pilots Association, told the 59th Annual Meeting of the NFPA. He also said that his group has been helping and will continue to assist fire departments with necessary technical information on aircraft rescue access methods. The speaker called for more modern airport rescue and fire fighting equipment at civilian airports as well as better radio communication between flight crews, control towers, and airport fire department equipment.

"The tremendous progress in the size and speed of today's aircraft demands this improved protection," he said.

On the same aviation section program, three fire marshals representing the municipal, county and local levels told of their experiences in controlling the fire hazards accompanying the use, transportation and storage of petroleum products and other flammable liquids.

The National Fire Protection Association is the source of most of the nation's fire safety standards and codes. The meeting officially adopted these new revised aviation fire safety standards: Aircraft Rescue and Fire Fighting Equipment for Airports; Municipal and Rural Fire Department Handling of Aircraft Fires; Fueling Aircraft on the Ground; and Aircraft Hand Fire Extinguishers.

The NFPA Aviation section representing commercial airlines, airport management, the petroleum industry, pilots, fire protection engineering groups, and civil and military aviation authorities, also presented and obtained tentative NFPA approval of fire safety standards on Procedure for Inerting Aircraft Fuel Tanks, and on Aircraft Fuel Servicing Vehicles.

April Losses Up

ESTIMATED fire losses in the United States during April amounted to $78,632,000, the National Board of Fire Underwriters has reported. This loss represents an increase of 0.9 percent over losses of $77,933,000 reported for April 1954, and the usual seasonal decrease of 10.8 percent from losses of $88,197,000 for last March (1955).

Losses for the first four months of 1955 now total $327,140,000, a decrease of 0.3 percent from the first four months of 1954, when they amounted to $328,175,000. These estimated insured losses include an allowance for uninsured and unreported losses.

Fire Hazard Trends

GENERAL OVERALL improvement in city fire protection is noted by the National Board of Fire Underwriters in a report of its Committee on Fire Prevention and Engineering Standards. About two-thirds of nearly 500 cities surveyed by the Board's engineers have kept fire protection abreast of growth or have improved it.

Water supply leads in improvements, with three-fourths of the cities on the list. Next in order are

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It's a Life Saver

IT LOCKS—IT HOLDS

SAFETY DEVICE FOR LADDERS

Prevents death and injuries from falling.

Inexpensive: Easy to Install. Clamps on ladder rung or structures with peg steps or framework etc. No welding or cutting.

Automatic: Positive. Will catch workman if he starts to fall even if unconscious.

Simple to operate. No upkeep. Requires no attention from climber.

Notched rail **hot dipped galvanized.** Entire equipment rust and corrosion proof.

In use throughout country and abroad for approximately 6 years.

Patented. Manufactured only by

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(Use Key # G-33 on Inquiry Card on page 55)

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THE SAFER SOLVENT

(contains Inhibited 1,1,1-Trichloroethane)

USES: Solvent for wax, grease, oil and tars.

METAL AND METAL-WORKING INDUSTRIES: For metal cleaning, X-SOL is especially suitable for cold cleaning, dip-cleaning and bucket cleaning operations (not recommended for use in vapor degreasing).

X-SOL does not corrode aluminum and aluminum alloys under ordinary conditions, but it may be possible under particularly drastic or unusual conditions for some corrosion to occur.

DRY-CLEANING AND SPOTTING: Cold Process.

ADVANTAGES: Low Toxicity, one of the least toxic of the chlorinated solvents (M.A.C. 500 ppm).
No hazard of Fire or Explosion.

Manufactured by:

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(Use Key # G-28 on Inquiry Card on page 55)

building laws, structural conditions, fire prevention and fire alarm.

"The weak point in fire departments is now found in manning," adds the report. "Improvements in equipment cannot overcome this manning problem entirely. There is a noticeable trend to reduce the effect of undermanning by judiciously relocating fire stations. Frequently this can result in improved protection from fewer but better located and better manned companies."

The report notes these other trends:

"The occurrence of large loss fires continues in communities too small to be expected to provide adequate fire protection for such large properties.

"Industrial hazards are increasing as the use of highly combustible and explosive materials expands and as new processes require higher temperatures, pressures and speeds and larger building areas.

"Warehousing hazards are increasing as economics of operation encourages larger building areas, higher and larger piling of stock."

Rural Fires

"IT IS NO wonder that the public attitude toward fire prevention is sometimes unresponsive," L. G. Keeney, Grinnell, Iowa, Chairman of the NFPA Committee on Farm Fire Protection, told a session on "Municipal and Rural Fire Protection" at the NFPA annual meeting. "There appears to be an alarming lack of personal responsibility where property maintenance and fire prevention measures are concerned. This may be a result of a changing attitude in which individual responsibility tends to be replaced by complete dependence upon group action.

"Paying dues to a medical or hospital service organization does not reduce the chances of injury and disease. It is likely that no great gain will be made until farm owners are encouraged to realize that the fire problem is a personal one which will be solved only by individual effort."

In the 25 years since his NFPA committee was founded, "farming has become big business" with new hazards, such as mechanization (involving more motors, electric sparks and flammable fuels) crop drying and the brooding of livestock and poultry, with attendant heat risks, Mr. Keeney pointed out. The farm still feeds the city, so the city-dweller must be concerned with the estimate that "farm fires have been responsible for more than one-seventh of the national fire loss."

"Each farm operator sets his own standards and does pretty much as he pleases," the Iowan said, pointing up the importance of an intensive and continuing rural educational campaign in fire prevention. He complimented the emphasis many 4-H clubs now are putting on the problems of, first, identifying and eliminating or abating fire hazards and, second, having materials for fire-fighting at hand if fire should start, and knowing how to use those materials. Also, he commented, "Volunteer firemen now have the opportunity to use much of their effort in the direction of loss prevention, as opposed to planning only for emergency action. . . . The farmer needs advice as to the choice of equipment as well as instructions and training for emergencies. In certain areas, notably Ohio, volunteer firemen have undertaken extensive campaigns in which the firemen serve as inspectors and as trainers of others."

Pressure Tank Systems

"SPRINKLER HEADS belong wherever they can save a life," Assistant Fire Chief Edward N. Montgomery, Boston, told the National Fire Protection Association at its 59th annual meeting in Cincinnati. Chief Montgomery particularly extolled the value of even just one or a few sprinkler heads placed at strategic points in a home, tenement or other building—particularly as life savers.

(Continued on page 54)

Fire Control For a Chemical Plastics Plant

Gate guard examines truck driver's pass, while driver fastens car pass to windshield. Car pass has fire and smoking instructions on it as well as speed limit.

The Problem: How to develop a successful fire safety program for a chemical-plastics plant processing highly volatile elements.

The Solution: "Sell" top management and get it to support the program 100 percent.

THIS, IN A NUTSHELL, is the story of the highly effective fire safety program developed by the Bristol, Pa., plant of Rohm & Haas Company, one of the world's largest producers of volatile chemicals and plastics.

Success of the entire program may be gauged by the remark of one veteran employee. "Before I came to work here, I didn't know one kind of an extinguisher from another. If I'd been near a fire, I'd have grabbed the nearest one and let go. Now I know that isn't always the correct thing to do. Some extinguishers can't be used against certain kinds of fire. If I'm ever in a tough spot with a fire, I know one thing for sure—I won't spread the fire by using the wrong extinguisher."

An important factor in the success of its program is the fact that fire safety officials at the company were not afraid to try something new. A few years ago, for example, after lengthy tests and demonstrations, the safety men decided to switch to dry chemical fire equipment to guard certain hazards, such as fires in flammable liquids, gases and electrical equipment. This was regarded as a bold step in the industry at the time, for although dry chemical had won acceptance in the petroleum, steel, transportation and other industries, it was comparatively untested in the plastics and chemical fields.

Today, 40 percent of all the Bristol plant's portable extinguishers are of the dry chemical type made by the Ansul Chemical Company, with the figure reaching 80 percent in newer buildings of the plant.

Easy and Safe to Use

The dry chemical is regarded as satisfactory because it is easy and safe for the plant employees to use. It does not require an operator to approach too close to the fire, and the dry chemical—which absorbs heat effectively—acts as a protective heat shield.

Most of the dry chemical used at the plant is for training purposes, and therein lies the success of the plant's fire protection program. For even though the plant has 4 volunteer fire brigades that operate around the clock, every one of the other 2 thousand employees also receives training in the use of first aid fire equipment.

Those employees involved in key processes receive brush-up courses even more often, depending on how critical their work area is rated. All employees are subject to spot check quizzes, in which fire marshals ask them pertinent questions about fire hazards, fire alarms, and the use of fire fighting equipment.

Departmental fire drills are held once a month, but the 100 fire brigade members go to fire school twice a month. Each brigade of 25 men is under the supervision of a fire marshal, who has had professional fire department experience. There are 4 fire marshals, one for each 8-hour shift, so that a fire marshal is on duty around the clock. Each brigade is organized so that the men have assigned duties, such as driver, pump operator, hoseman and utility man.

Brigade members receive extra compensation for the time they

spend drilling and attending fire schools, and since this is usually done after working hours, it really amounts to overtime pay. Even during holidays and at vacation time, when the plant halts production, fire brigade members remain on duty.

The elimination of fire sources in the plant starts with complete fire hazard inspections of the plant buildings and equipment by the plant fire marshals. All buildings and areas are under the fire marshals' surveillance at all times.

Painter puts white top on hydrant to indicate it supplies plant water. Red hydrant at right supplies city water used only as a last resort in fire-fighting. City also supplies water for the plant sprinkler system.

Fire Hazard Check List

Each month a fire marshal at the Rohm & Haas Chemical-plastics plant hands in a report on the hazards below. He is checking them constantly to give his plant the protection from fire this type of industry needs. It may seem lengthy but it's worth it.

1. Condition of buildings
2. Housekeeping
3. Electric, gas or heat hazards
4. Flammable liquid and explosive hazards
5. Matches and smoking—spark arrestors
6. Machinery, tools, ladders
7. Safety equipment
8. Bulletin boards and safety signs
9. Condition of hose
10. Chemical extinguishers and engines
11. Automatic sprinklers and sprays
12. Hydrants
13. Hose, hose boxes or houses
14. Motorized fire trucks and portable pumpers
15. Valves
16. Water supplies and fire mains
17. Watchman service and fire alarms
18. Fire fighting and inspections

In making the inspection of his area, the fire marshal checks certain items and makes sure that corrective action is taken wherever fire or safety hazards are noted. He also reports these hazards on a monthly inspection report (See fire marshals' check list).

Any hazardous conditions are discussed with the area supervisor and are noted on this inspection report. Where immediate corrective action can be taken, this is done. Where the hazards require planning or changes in building or equipment layout, arrangements are made to start corrective action.

On the design and layout of new equipment, buildings or other plant facilities, the safety department works with the engineering and construction departments, making a careful and thorough study of the proposed construction or installation. All points are analyzed for fire hazards and the best methods for elimination or control of these hazards are worked out. State, local and insurance code requirements are considered in all equipment and building installations. Before any mechanical or construction work is started within the plant, the scope of the work and the equipment to be used are reviewed by the fire marshal.

Should the work involve any sources of ignition such as welding, burning, flame or fire, electrical tools, etc., a safety permit must be obtained. This permit, signed by the job foreman, the department supervisor, the welder or mechanic, and the fire marshal, certifies that the equipment has been inspected and that all arrangements are complete to eliminate fire hazards. Standby fire watchers, equipped with extinguishers and alerted to the hazards of the work, are used when the work is in an area where flammable materials are used or stored. Even after the work is complete, these men make a careful inspection.

Part of fire marshal's job is regular inspection of big dry chemical extinguisher.

The plant is restricted for smoking and only certain areas which are plainly marked, are designated as smoking areas. All contractors' employees, as well as the plant employees, are indoctrinated in the plant safety and fire protection rules and regulations before they may work on plant property.

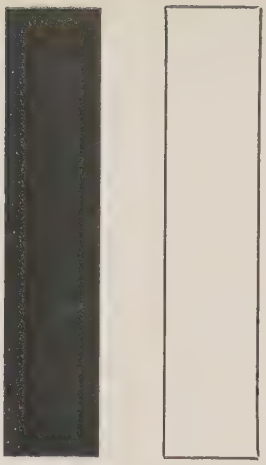
And, If Fire Strikes . . .?

But, if in spite of all these precautions, a fire does occur within the plant, the plant fire fighting equipment and trained personnel are ready at all times to go into action. The plant has 4 portable pumpers of 600 gallon capacity; 1 fire truck which carries hose and nozzles, various types of breathing apparatus, fire extinguishers, fog nozzles and a limited supply of mechanical foam.

In some of the buildings, permanent foam stations are installed to protect flammable liquids used in production. The plant fire alarm system consists of 66 alarm boxes located at strategic points throughout the plant, a controlled recorder which automatically records and relays any fire alarm signal turned in, the fire alarm bells and horns which are controlled by the recorder controls. These fire alarm boxes are operated manually. All employees are instructed in their location and the method of operation. Whenever a fire occurs, an alarm is turned in to summon the fire brigade. Evacuation sirens are used in certain buildings where large numbers of people are at work.

Pictures by courtesy Rohm & Haas Co.

Yes, You Can Now Use Paper Thermometers



Graded heat-sensitive paper at left turns from white to black at predetermined temperature to show overheating.

A GRADED SERIES OF heat-sensitive temperature indicating papers,* recently put on the market, cover a range from 100° F. through 490° F. They have been designed for conditions where conventional temperature measuring devices cannot do the job or where expensive recording equipment would be needed.

The indicator papers are coated with a white thermo-sensitive material which turns black at predetermined temperatures. This white to black change in appearance occurs very sharply within 1 percent of the temperature for which the paper is designed.

Two Types of Thermometer

Two types of indicators are available. The first is in the form of 3-eighths by 2 inch strips available in 30 different temperatures between 115° F and 490° F. These are used for determining surface temperatures on motor casings, electrical conduits, between mating parts or in tests where a high rate of response is required.

The second type consists of white strips of heat-sensitive papers sealed in small glass tubes. Thirty-eight different temperatures are available between 100° F and 470° F. This version of the paper has been designed for use in the presence of steam, water, oil or solvents or where long term tests require the protection of glass.

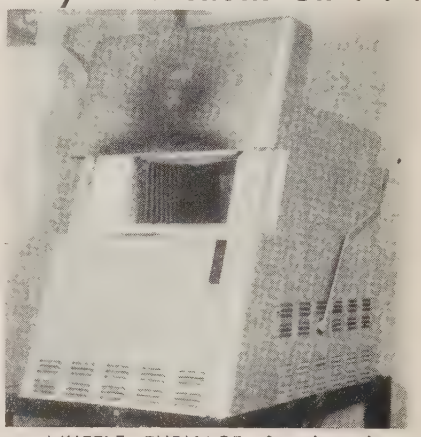
In general, the paper is used when a very fast response is required or where surface temperatures are to be read. When heating tests last several minutes or longer or when there is danger of wetting or contamination, the tube is used. Because of the presence of glass in the tube, the response requires several seconds in contrast to the fraction of a second response for the paper.

Irreversibility—Important Feature

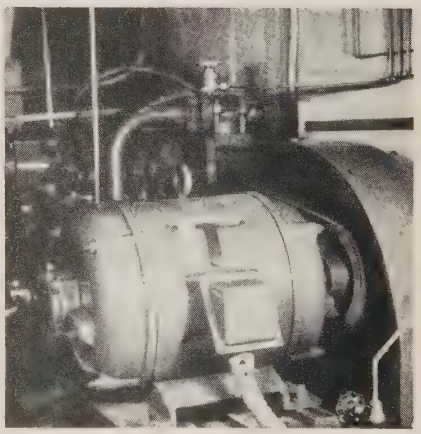
One important feature of both indicators which makes them extremely valuable for many uses is their irreversibility. Once a given test indicator has attained its rated temperature it will turn black permanently, irrespective of any subsequent heating or cooling. Thus, for tests which cannot be observed directly or for extended tests where it is impractical to maintain continued observation, the paper and tube are simple, inexpensive replacements for complicated and expensive recording equipment. For instance, the maximum temperature attained by a motor, oven or furnace room during an extended period of operation can be determined by the use of several indicators which bracket the expected temperature maximum. There is no need to observe the change directly since it occurs irreversibly and can therefore be inspected at any time after the test period.

The tube and paper offer considerable savings since they can do the job usually requiring costly re-

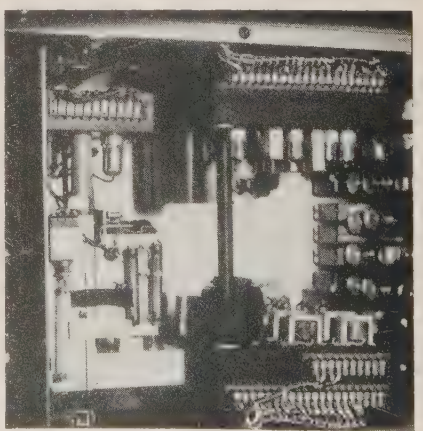
They Will Check On . . .



MUFFLE FURNACE—fire hazard.



ELECTRIC MOTOR—overheating.



ELECTRONIC EQUIPMENT—tube burning.

* A source for further information about the devices may be obtained on inquiry to the editor.

Paper Thermometer Uses in the Safety and Maintenance Field

1. Checking maximum temperatures in operating electronic equipment where transformers, power tubes and faulty circuits constitute a fire hazard.

2. Measuring maximum temperatures attained by electric motors, ovens and engines during a period of operation.

3. Determination of the temperature of electrical conductors which require checks on loading and heating conditions.

4. Measurement of irradiated heat in large fire tests.

5. Determination of the maximum temperature at the ceiling in rooms where fire-detecting thermostats are to be installed.

6. Routine testing of the temperature in electric water heaters by measuring the surface temperature of the heater.

cording equipment and trained operators. They are so simple to use that the collection of temperature data can be left to the most unskilled worker. There is no danger of mistakes since a permanent record is obtained.

Pictures by courtesy of Paper Thermometer Co.

Pressure Tank Systems

(Continued from page 50)

Expanding use of so-called "pressure tank" sprinkler systems for life safety in buildings where city water supplies are not available was analyzed by Pickard E. Wagner, New York, of the National Automatic Sprinkler and Fire Control Association.

Pressure tanks may be installed even in a basement; they contain water under air pressure and the air supplies the force for delivering the water after heat unseals a sprinkler head dousing the fire where it originates. "They are not substitutes for a complete sprinkler system with a city water supply or a gravity tank" (which might be economically or otherwise unfeasible), but pressure tanks should have immediate consideration "where it is a question of putting in a limited water supply system or having no automatic fire protection at all," Mr. Wagner said.

Especially for life saving, but also for property protection, pressure tank sprinkler systems can be recommended for outlying nursing homes, resort hotels, country clubs, camps, dance halls, township schools, college dormitories, canneries, hatcheries, country cotton gins and grain elevators. Mr. Wagner said that the systems have made good records in such installations.

Chief Montgomery, informally discussing partial sprinkler installations wherever adequate pressure can be provided, suggested the tops of stairwells (natural flues for uprush of fire) especially; also, points near old chimneys or near basement heating plants.

Fire Prevention Bureau Specialists or other fire department personnel can point out the critical spots in a home or other buildings where a sprinkler head or two might mean the difference between a minor blaze and a raging fire, Chief Montgomery said.

"Of the 58,961 fires in 'sprinklered occupancies' reported to the NFPA in the period 1925–1954, 96.2 percent were successfully controlled or extinguished by automatic sprinklers," Mr. Wagner said (of the other 3.8 percent, more than one-third were due to closed supply valves). It is known, too, that numerous fires extinguished by one or two sprinklers were not even reported to NFPA, he noted. But of the fires reported in all types of sprinklered occupancies: "Over 54 percent of fires have been controlled by two or less sprinklers; six or fewer sprinklers controlled or extinguished over 76 percent of all fires, and 10 sprinklers or fewer, almost 84 percent.

Pressure tank systems should be in selected properties: not, for instance, where there was danger of flash fire or where large quantities of highly combustible material would be stored, Mr. Wagner commented. But in most fires in selected properties "the system would extinguish the fire; in practically all cases it would provide a holding operation until a fire department arrived."

The record of one type of small limited water supply system, using a pressure tank as a source of water supply, includes 159 fires, only six with unsatisfactory control, Mr. Wagner said. But 86.2 percent of these fires were controlled by three or less sprinklers.

"Regular inspection service is, of course, one of the best safeguards to any type of fire protection," Mr. Wagner noted.

Electrical Fires

THERE IS A "growing public realization that electricity, used wisely, is one of Mankind's greatest benefactors, and, used unwisely, is a potential menace to life and property," the Nation's electrical engineers were told in an analysis of electrical accidents and fires in Ontario, Canada, in the past five years. The analysis was given by E. W. McLeod, chief electrical inspector, Hydro-Electric Power Commission of Ontario, at a safety session during the Summer General Meeting of the American Institute of Electrical Engineers.

"The remedy certainly lies in unremitting safety education, and the fostering of safety consciousness in all its aspects with those concerned," Mr. McLeod observed.

From 1950 to 1954 inclusive, 65 electrical fires and 87 fatalities occurred in the territory served by Ontario Hydro, despite the efforts of 145 inspectors, and a sustained educational campaign by the company and the utilities it serves. The utility covers 412,582 square miles.

Fatal accidents resulted from contact with high voltage lines and electrical contact in industry and in and around the home. In an effort to reduce fatalities, Hydro Electric specifies clearances between high voltage conductors and wells, metal flag poles, silos, etc., and is now testing warning notices made of special durable paper and attached to cranes with all-weather adhesive. It stresses grounding of non-current carrying metal parts.

Fires, in general, resulted from over-fusing circuits, using improper wiring and failure of insulation.

FREE BULLETINS & CATALOGS

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Fork Truck Attachments 323
Iron Works, Inc. Attachment and devices for all makes of lift trucks are described and illustrated in this 12-page brochure. Included are: all-purpose arms, side shifters; bale, keg and rotating roll clamps; safety racks; fork extensions; scoops; brooms; rams; snow plows; load pushers, etc.

Magnetic Conveyors 324
Homer Mfg. Co. Magnetic belt conveyor units that can carry ferrous metal parts and pieces by magnetic attraction in a vertical, slanting, or horizontal direction are described in this bulletin. Portability and adaptability of units are emphasized and typical uses are illustrated.

Conductive Casters 325
Faultless Caster Corp. Electrically conductive casters suitable for grounding equipment in hospital operating rooms to prevent explosions and fires are described in this folder. In addition to these UL listed casters, the bulletin shows wheels, leg tips, glides, etc. for non-hazardous hospital areas.

LP-Gas Fork Trucks 326
Clark Equipment Co. A 4-page bulletin illustrates and describes the advantages of liquefied petroleum gas power for industrial fork trucks. Line drawings explain construction of UL approved LP-Gas system.

Crane Scales 327
Baldwin-Lima-Hamilton Corp. The design and uses of crane scales for weighing objects at the same time they are lifted are outlined in this 12-page bulletin. Prevents operloading of cranes as well as providing inventory control of materials. Various sizes and models included.

PERSONAL PROTECTION

Linemen's Curved-Hand Gloves.. 328
White Rubber Co. This highly informative, illustrated brochure not only gives full data and advantages of linemen's rubber gloves and mittens that are curved to a natural hand shape, but also includes details on electrical safety and the care & maintenance of rubber gloves. Also shown are leather "protector" gloves or mittens, cotton inner liners, plastic cuff guards and glove bags.

Hard Cap With Eye Shield 329
Mine Safety Appliances Co. This bulletin describes and illustrates a clear or green plastic eyeshield that can be attached to the visor of Skullgard caps and hats equipped with laced-in linings.

HEALTH & HYGIENE

Glove Patch Test Kit 330
Pioneer Rubber Co. For industrial dermatologists, this patch test kit contains small skin-patch disks of Stanflex and Stanzoil liquid-tight gloves. With the kit, medical departments can discover if any personnel are allergic to the plastic or neoprene materials or glove linings.

Electric Water Coolers 331
Cordley & Hayes. A new line of electric water coolers are offered in this bulletin that features the units' dual hand & foot controls, thermostatic protection for storage system, thermostatic control of water temperature, and increased water capacity. Selection table lists 14 models of coolers for various installations.

Emergency Showers 332
Speakman Co. Four heavy-duty models of emergency showers to provide a rinsing deluge of water for washing away splashed acid or for extinguishing clothing fires are described and illustrated in this 8-page brochure. Units are operated by pull chain, lever or foot treadle. Drawings show installation and specifications and table gives water requirements.

Audiometer 333
Beltone Hearing Aid Co. Colorful well-illustrated brochure describes features of a new type audiometer for testing hearing of employees. Three models of the portable units are included.

Antiseptic Skin Cleanser 334
Dameron Enterprises Inc. A skin cleanser that can be used with or without water for the removal of grease, paint, ink, asphalt as well as grime is described in this folder which points out that the antiseptic and lanolin ingredients help control dermatitis. Several dispensing methods are shown, including washroom units, waterless stations, individual cans, plastic bags for vehicle or outside use.

LADDERS & SCAFFOLDS

Aluminum Industrial Ladders ... 335
Aluminum Ladder Co. Completely illustrated 44-page catalog shows a full line of heavy-duty aluminum ladders for industry. Data includes suggested uses and full specifications for each type. Stages, scaffolds, conveyors and specialized items shown.

Maintenance Trestles 336
Bil-Jax, Inc. An 8-page catalog section shows various types of maintenance trestles made of tubular steel and includes a page of safety practices in handling and using the equipment. Data also given on related equipment: rolling ladders, window platforms, lean-to ladders, jacks.

MAINTENANCE

Building Cleaning Manual 337
Penetone Co. An unusually informative 45-page guide, packed with practical data and tips on all phases of building maintenance. Text and illustrations show efficient methods and actual techniques of maintaining all types of floors, washrooms, lights, walls, ceilings, electrical equipment, masonry, etc.

Bacterial Action of Septic Tanks..338
FX-Lab Co. An interesting 8-page booklet with cartoon illustrations presents "The Story
(Continued on next page)

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July, 1955

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Free Bulletins (Cont'd)

of Willie Bacteria, or How to Take Care of Your Septic Tank or Cesspool." It outlines the bacterial action of the disposal system and gives data on its efficient maintenance.

Suction Cleaning 339
Handling Devices Co., Inc. Illustrated bulletin gives data on Floormobile for the suction cleaning of dust, dirt, lint, trash, paper, etc. from large floor areas. Case history material compares it with other cleaning methods.

Washroom Maintenance 340
Huntington Laboratories, Inc. Concise manual gives step-by-step daily schedule for maintenance of public washrooms in factories, schools, hospitals, etc. Also includes schedule for weekly washroom care.

Floor Covering Technical Data .. 341
Hercules Flooring Co. This 16-page manual gives helpful data on the selection of flooring material. Charts show how various types of floor coverings compare in safety, cleanability, greaseproofness, etc.; and what types of floors are suitable for 33 different types of applications.

FIRE PROTECTION

In-Plant Fire Truck 342
C. M. C. Co. Illustrated bulletin describes a small motorized fire truck for in-plant use, equipped with water tank, hose, foam and wetting agent tanks and space for optional equipment.

High-Pressure Fog 343
John Bean Div. A 16-page bulletin describes and illustrates several high-pressure fog fire-fighting units, including stationary industrial models, motorized trucks, skid and industrial truck mounted. Also data on the fog principle of fire fighting and applications to many types of fires.

Fire Protection Catalog 344
W. D. Allen Mfg. Co. This 42-page architects & engineers catalog describes and illustrates a wide range of fire protection equipment: extinguisher and hose cabinets, hand extinguishers, firemen's tools, hydrant connections, valves, nozzles, fog nozzles, hose racks & reels, etc.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protection Clothing
109	Safety Belts
110	Safety Gloves
111	Foot Protection
112	Anti-Slip Soles
113	Oil-Proof Soles
114	Welding Helmets
115	Welding Curtains
	FIRST AID AND PERSONAL HYGIENE
120	Protective Skin Cream
121	Skin Cleansers
122	Sanitary Drinking Cups
123	Athlete's Foot Control
124	Salt Tablets
125	Noise Analysis & Control
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Resuscitators
	DUST & FUME CONTROL
135	Portable Ventilator
136	Dust & Fume Collectors
137	Carbon Monoxide Control

Key Number	Subject
	FIRE PROTECTION
140	Fire Extinguishers
141	Safety Cans
142	Extinguishing Ashtray
143	Safer Solvents
144	Degreasing Machines
145	Combustion Safeguards
146	Flammable Liquid Pumps
147	Fire Retardants
	LIGHTING & ELECTRICAL EQUIPMENT
150	Alarms & Warning Lights
151	Explosion-Proof Lights
152	Electrical Insulation Tester
153	Fluorescent Lamp Guards
	FLOOR & BUILDING MAINTENANCE
160	Anti-Slip Floors & Mats
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Cleaning Machines
164	Oil & Grease Absorbents
165	Paints
	LADDERS & SCAFFOLDS
170	Ladders & Safety Devices
171	Scaffolds
172	Work Platforms
	GUARDS
175	Machine Guards
176	Power Press Feeders
	EDUCATIONAL AIDS
180	Safety Signs
181	Aisle Marking Equipment
182	Safety Awards & Emblems
183	Employee Safety Guide

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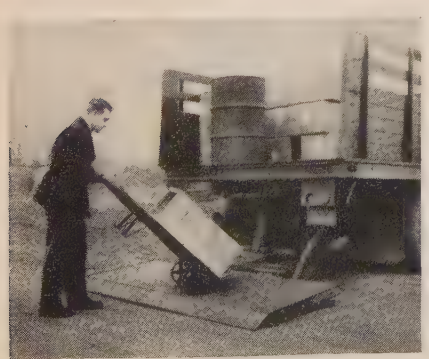
WHAT'S YOUR PROBLEM?

NEW TAILGATE LOADER

A NEW TAILGATE LOADER solves the trucker's or handler's problem of getting heavy loads up into the truck quickly, safely and economically reports the manufacturer. Two capacities are available, 2 thousand and 4 thousand pounds. The assembly is mounted under the rear of a truck and operates hydraulically, lifting operator and load or handtruck to the truck bed level and then closing as a tailgate.

Among advantages described are the fact that it fits all 1 and one-half ton and larger trucks, requires no cutting or altering of cross members and undercarriage for mounting, "lines up" with the truck, with overall height of the mounted unit lower than the top of truck tires, and the gate does not have to be closed manually. Flooring on the gate is of non-skid steel construction, and the gate edge is beveled for easier loading. The unit is said not to be affected by rough roads or chassis twist.

One of the tailgate loader's principal features is its safety factor. The man loading the truck is entirely freed from lifting or strain on arms, back and shoulders, since the loader is lever-operated. When the gate is level with the truck floor, it locks in place. When the gate is in this position, a mechanical safety lock on the main cylinder holds it there, even in case of power failure. When the gate has been closed and locked in final position, it is absolutely secure. If a weight of 50 pounds or more is on the tailgate before complete closing, power of the closing jack automatically shuts off. This prevents accidents that might result from material remaining on the gate. As a prime operating safety factor, the driver of a truck equipped with the tailgate loader must walk to the rear of the truck to unlatch the safety lock, thus making sure that he will see anything in the way of the gate before the gate is opened. When the gate is at floor level, a safety lock on the main cylinder holds the gate at that position. Protection is thus provided, throughout the process, against overloading or mis-loading of the truck.



For complete details, use Key # TS-16 on free Inquiry Card on page 55.

How Do YOU Look At An Accident?

These problems test your ability to judge accident responsibility based on modern defensive driving techniques. They have been devised by Donald S. Buck, safety director, U. S. Army Transportation Corps. Two of them appeared in last month's Safety Maintenance; watch for more of them in succeeding issues.

In passing judgment on these accidents, assume that each report is based on a true accident; that each driver's statement is true and complete as given. Decide in each case whether the driver caused the accident or was victim. Evaluate each case on the basis of reasonable preventability. If you feel the driver helped cause his accident score the problem "C." If you feel that he was solely the victim of circumstances beyond his reasonable control, score the problem "V" for victim.

Remember that you are not analyzing the cases on the basis of legal responsibility! You are not deciding who is at fault, but determining who helped to cause the accident.

Case No. 3—Driver's Statement

"I was driving along in heavy traffic when the guy ahead of me stopped suddenly, without any warning or signal at all. We were traveling only 20 mph, and I was at least 25 feet behind him. I slammed on the brakes and hit the horn, and cut my wheel, but I didn't have a chance, and I slid into his back end. The police told me that the other driver was obstructing the highway. He admitted that he gave no signal at all. He stopped suddenly when a child darted out ahead of him, and caused the accident by not giving me fair warning."

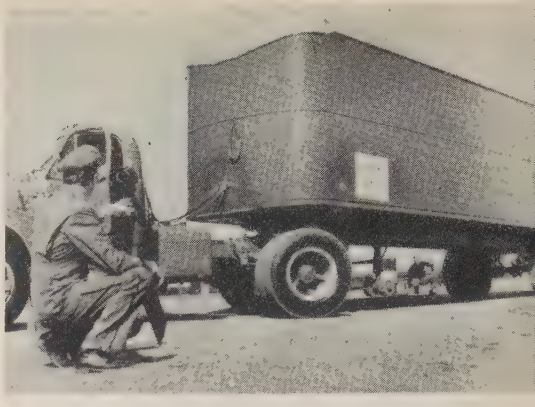
Case No. 4—Driver's Statement

"It was brake failure pure and simple and I am sure lucky that no one else was coming toward me. I was driving along, at only 30 mph, on wet pavement, when a child ran out in front of me. I applied the brakes hard, but they grabbed and threw me violently to the left. The back end of my vehicle skidded past the front end, although I steered towards the direction of the skid, and I finally wound up on the wrong side of the road in the ditch. Those brakes were adusted at the garage just three days ago.

Answers are on page 60

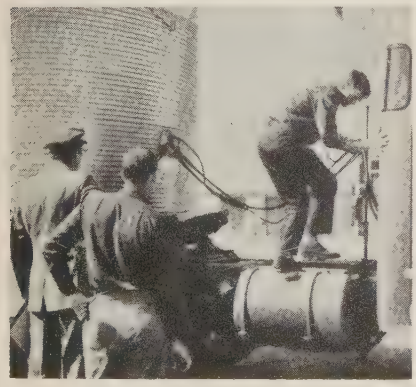
Classroom work is important part of curriculum, makes driver safety conscious.

Student learns details of using and adjusting his side-view mirror.

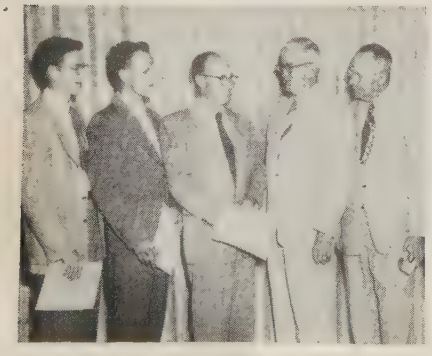


The ability to back and maneuver in confined spaces is truck-driver skill being taught here.

Students here change tires on semi, as part of the practical section of course.



Instructors watch as student familiarizes himself with coupling by actual practice.



Smiling graduates at left receive diplomas on successful completion of trucker course.

Educate

With the trucking industry moving tons and tons of freight millions of miles almost everyday, the man in the truck cab has taken on considerable importance. A huge industry depends upon his skill at his profession-driving. Since his profession is driving most trucking fleets have come to recognze that he must be a professional driver, in the strictest sense of the word. Not just a good driver, but a trained one.

Many companies have found that one of the more outstanding training grounds for their men is the Truck Driver Training School at North Carolina State College, in Raleigh, N. C. Under Russell M. Haynie, Jr., director of instruction, and George W. McAfee, field road instructor, students at this unusual 4-week school receive intensive instruction in truck driving from 8 a.m. to 6 p.m., with evenings reserved for homework.

Classroom Work . . .

The course is divided into 4 categories: classroom instruction, fundamental driving skills, road driving, and city driving. Mornings are usually devoted to 3 classroom sessions in which safety is built into the pupil's mind till it becomes as much a part of him as eating or sleeping. Lectures and discussions cover defensive driving practices, state, and interstate laws and regulations, accident and insurance procedures, first aid, fire-fighting, and truck maintenance.

Besides this well-rounded classroom training, students get hours of thorough instruction in basic driving skills. They learn the fundamentals of starting, stopping, turning, backing, alley dock parking, jack-knife parking, overhead clearance, serpentine maneuvering, nomenclature and inspection, and coupling and uncoupling. Since some trucks weigh as much as 20 tons loaded, compared with the 2-ton weight of a passenger car, all the fine points of skillful driving become doubly important.

Plus Actual Driving . . .

With a solid foundation of "book learning," and basic driving instruction, the real task begins when students take to the highways in one of the school's tractor-semi-trailers. At first they stay on the lightly traveled back roads, but as they progress and grow more confident they graduate to the most difficult driving conditions truck drivers encounter—close maneuvering in heavy city traffic. During the last week of classes students take comprehensive tests on all areas covered in the course. It is a credit to both the students and the instructors at North Carolina State that 90 percent of those who enroll successfully complete the course.

Just how much trucking compa-

TRUCK DRIVING

nies themselves think of the school is pointed up by the fact that about 95 percent of the graduates receive offers of immediate employment. Even the old-time drivers who at first scoffed at the "college boys" frequently copy some of the new, university methods.

Give Solid Foundation . . .

The school, of course, doesn't pretend to turn out finished drivers in 4 weeks. But the instructors do maintain that their pupils get an exceptionally solid foundation on which to build through actual driving experience. They "point with pride" to the safety record of their graduates and to statements of trucking companies that their graduates are easier to break in on the job.

The origin of North Carolina State's truck driver training school dates back to 1939 when the Council of Safety Supervisors of the North Carolina Motor Carriers Association decided to turn to the field of education to promote safety in the growing trucking industry. World War II delayed opening the school until 1949, but the first class enrolled in August of that year. The first of its kind to be sponsored by a college, the North Carolina school is the only one of its type in the country in continuous operation. Twelve 4-week classes, with an average of 25 pupils in each, are held each year. Other schools operate similar courses, but only on a periodic basis.

To Eager Students . . .

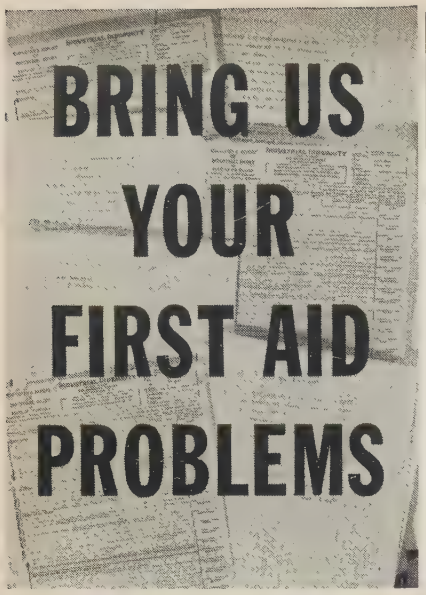
The course is open to applicants who have a valid driver's license, the ability to read and write, and who can furnish 2 character references. It goes without saying that the applicant must also have a strong urge to get behind the wheel of a big truck and drive it in all sorts of weather and terrain to where it has to go. Tuition is 125 dollars which students may pay on a deferred plan.

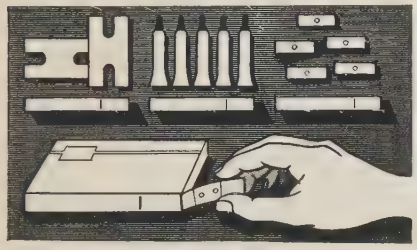
Operating Good Equipment

The school operates equipment valued at 50 thousand dollars and large fleets and truck manufacturers often loan their trucks so there is no shortage of vehicles to drive. So far, about 2 thousand students have entered the school and 18 hundred of them have satisfactorily completed the course. About 87 percent were North Carolinians and the remaining 13 percent came from other states and 6 foreign countries.

The results of the school's good training and its "safety first" creed can be seen most clearly in the 500 thousand miles its students have driven in 5 years of training with only 2 minor accidents and just 200 dollars worth of damage.

Reprinted from *Ethyl News*, published by Ethyl Corp., N. Y.





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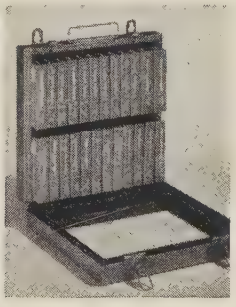

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(Use Key # G-29 on Inquiry Card on page 55)

Let's Put the Lessons of Industrial Safety to Use . . . in Traffic Safety

THIS WAS THE SUGGESTION made by John S. Bugas, vice-president in charge of industrial relations for the Ford Motor Company, in a recent talk to the Detroit Industrial Safety Council.

After outlining his own company's safety program and paying tribute to the accomplishments of safety throughout industry, Mr. Bugas went on to explain that lessons learned in this field could be applied to the traffic problem.

Comparing the relative similarity of workmen's compensation laws in all the states to the "near chaos" in traffic laws between states, counties, and even municipalities, he pointed out that the result was "utter confusion" for motorists and traffic experts alike.

"I believe," said Mr. Bugas, "that uniformity, the establishment of common ground rules, is one of our greatest and most urgent needs in this area. Until we have some semblance of uniformity, we will only be nibbling at the edges of the problem of safety on the American road."

"Take the problem of reporting," he continued, "which has given us an excellent safety barometer in industry. Most of the nationwide statistics put out are based on data from fewer than 30 states. From these, national figures are "projected." Statistics from the other states are unreliable, non-existent, or are based on criteria which make them useless so far as the over-all calculations are concerned.

"We can't fight this battle blindfolded"; he went on, "until we have a clear picture of the size and specifications of the adversary, we cannot hope to lick him. We learned this lesson in industrial safety; it seems to me equally applicable to the problem of traffic safety."

"In industry, employees engaged in operations which might be hazardous to others have to have special safety permits. These are analogous to the motor vehicle operator's permit issued by the states, but with an important difference. The crane operator, for example, must undergo periodic physical and technical tests in order to keep his permit. The automobile driver gets his once and for all, although in some cases the state will close the barn door by taking away his license or requiring a re-examination after he has been in a serious accident.

"Now I realize that the periodic re-examination of all drivers would present great difficulties—there are some 66 million of them on the roads today. However, I believe that some practical program under which drivers could be re-examined at in-

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Answers to How Do You Look at an Accident on page 57

Now that you have passed judgment on these accidents, let's review the answers to see how well you made out. Don't be disturbed if you didn't get a perfect score. Very few safety men have! Each case should have been scored with a "C" as "preventable."

3. Caused by our driver. Approximately 40 feet are required to make an emergency stop of a vehicle from 20 mph. Following another vehicle at only 25 feet is asking for an accident. A direct cause of this accident is the fact that the brakes were slammed on before the *wheel* was cut. It is impossible to steer a vehicle with locked brakes; so he should have first cut the wheel in the desired direction, applied the brakes with a pumping action to permit steerage. Thus he could have avoided striking the vehicle in front of him.

4. Caused by our driver. Contrary to popular belief, much more of the braking action comes from the front wheels than from the rear wheels, due to the weight distribution. Locking the brakes thus always tends to cause the front end to slow more quickly than the back end, often with a resultant skid. Our driver should have applied his brakes with a pumping action to permit steerage. The brakes were obviously in good working condition and their performance was normal and understandable. This was definitely caused by our man.

tervals, say, of 5 or 10 years can—and someday will—be worked out.

"In the meantime, there are a number of things we can do in the way of education—continuing education—and testing. During the school year just past, some 325 thousand high school students received a complete driver's training course. This is a sizable figure, but it still represents less than 20 percent of total eligible high school enrollment. Therefore, I believe we can expand and extend our training of new drivers.

"Continuing education will have to come largely through the mass media, because of the tremendous numbers of people involved. We have just begun to scratch the surface with the use of safe-driving films, booklets, newspaper and magazine articles, posters and billboards.

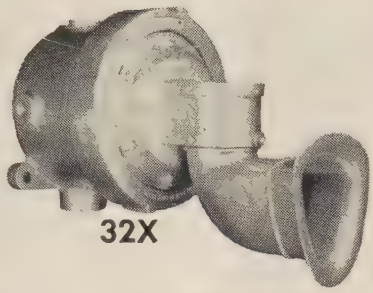
"As for testing, I believe the standards could be raised considerably without putting an intolerable burden on the examiners or the public purse. There are still some states where you can get an operator's license simply by slipping 50 cents into an envelope and mailing it off to the state capital. There is one state which not only does not license ordinary drivers, but doesn't even require permits for operators of public vehicles.

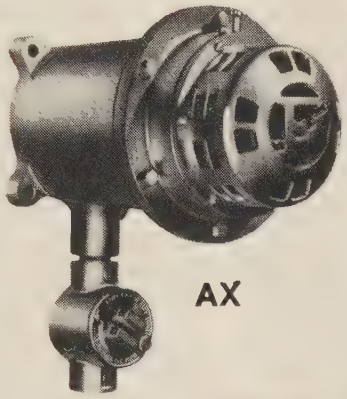
"Finally, let's consider for a moment the matter of inspection, which is so integral a part of our industrial safety program," Mr. Bugas added.

"Periodic inspection of motor vehicles is required in only 14 states, although in 8 others it is provided for under city ordinances. . . . Periodic inspection of automobiles will pay the same dividends, in terms of human lives and dollars and cents, that our rigid inspection systems have paid in factories.

"I might add a word of caution; a comprehensive and effective inspection program cannot be developed overnight. A new inspection system should be set up with relatively modest standards. These can gradually be raised, year by year, and new requirements added until the desired level of performance is reached.

SIGNAL . . . *even* in hazardous locations!





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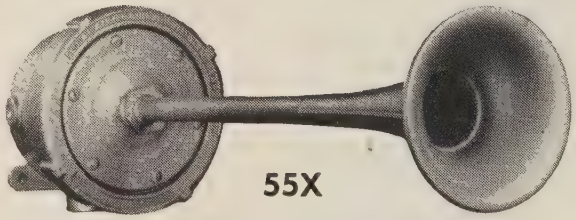

FEDERAL SIGN and SIGNAL Corporation

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(For details, use Key # G-30 on card on page 55)

"There are experts at work on the problem. The President's Action Committee for Traffic Safety is perhaps the most illustrious of these groups, but there are many others which have made and are making valuable contributions. We must all give continuing thought to ways and means of applying the hard-won lessons of industrial safety in the interests of the public at large," he concluded.

Transportation Center

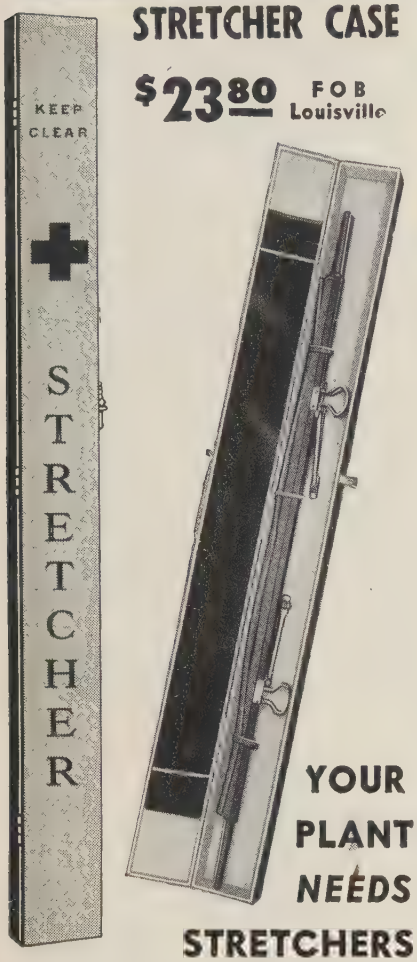
FRANKLIN M. KREML, director of the Northwestern University Traffic Institute since its establishment, has been appointed director of the university's new Transportation Center.

The Transportation Center will carry on programs aimed at solving major problems in the highway, rail, air, pipeline and water divisions of the nation's transportation industry.

JUNKIN STRETCHERS

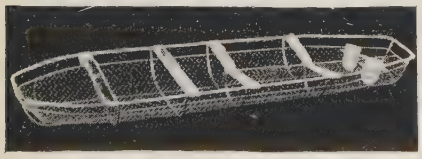
STRETCHER CASE

$23.80 FOB Louisville



YOUR PLANT NEEDS STRETCHERS

The Junkin Stretcher Case affords a convenient and compact cabinet for storing the army type stretcher, blankets and first aid equipment. It provides a definite location for the equipment and protects it against the deteriorating effects of dirt and grime. And because it's compact it's a SPACE SAVER too! Comes fully equipped if desired.



JUNKIN SPLINT-TYPE STRETCHER

Construction permits patient to be carried horizontally or lifted vertically without danger from inaccessible locations. Canvas straps and footrests keep patient rigid and comfortable. For complete information write for free descriptive literature.

JUNKIN ENGINEERED SAFETY

JUNKIN SAFETY APPLIANCE CO.
101 S. FLOYD ST.
LOUISVILLE 2, KENTUCKY

(Use Key # G-31 on Inquiry Card on page 55)

SAFETY ACHIEVEMENTS

THE PENNSYLVANIA MANUFACturers' Association presented safety awards to 35 drivers employed by the Valley Baking Company, Shippensburg, in recognition of their record of operating delivery vehicles without an accident for periods up to 17 years. The drivers rolled up a total of 193 years' driving unmarred by an accident. Added tribute was paid the company's application of modern safety practices by Oscar D. Shipley, safety director of the Pennsylvania Motor Truck Association.

• • •

THE NATION'S RAILROADS IN 1954 established one of their best all-round safety records in history, the Safety Section of the Association of American Railroads was told at its annual meeting. Casualties as a whole were reduced last year by 12.8 percent. In the passenger field, the railroads set a safety mark that equalled their second best all-time record with a fatality rate of .07 per 100,000,000 passenger-miles. Of the 21 passenger fatalities reported in 1954, only 5 actually involved passengers in train accidents. The remaining fatalities resulted from such causes as boarding and alighting or jumping and falling from moving trains. The number of passenger fatalities caused by both train and train-service accidents in 1954 represented a decline of more than 76 percent under the previous year.

Employee safety in 1954 was the best in the history of the railroads. Employee fatalities dropped 32 percent under the previous 12-month period, giving the railroads a safety record of .08 per million man-hours against .11 in 1953. Highway grade crossing fatalities decreased more than 12 percent under 1953, while that for trespassers dropped nearly 16 percent.

• • •

THE 700 EMPLOYEES OF THE SEALright midwestern factory in Kansas City, Kansas went 591 days, 2,213,000 man-hours, without a lost time accident, breaking the record for the paper box and container division of the paper industry by more than a million man-hours. The plant received the National Safety Council's Award of Honor.

• • •

FOR MAINTAINING A NO-LOST-TIME accident record during the recent Inter-Plant Safety Achievement Contest sponsored by the Philadelphia Safety Council of the Chamber of Commerce, Synthane Corporation, Oaks, Pa., received an Honor Award. The six month contest period ran from July 1 to December 31, 1954. Of the 161 companies participating, 30 earned Honor Awards, 25 received Industry-Wide Awards, and 58 were recognized for Achievement. A final tabulation among the participating companies showed that the average accident rate had been reduced 17% over a similar period for the previous year. This figure was 10% below the national average.

• • •

UNITED STATES RUBBER CO. HAS won the Award of Honor by the National Safety Council for the rec-

ord of safety it established in 36 domestic plants during 1954.

During 1954 the rubber company had 2.5 lost-time accidents for every million man hours worked. For the preceding three-year period the company averaged 3.7 accidents for each million man hours, and the entire rubber industry averaged 5.5 lost-time accidents for the same period.

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NEARLY 90,000 DU PONT EMployees worked the entire year of 1954 with only 57 lost-time injuries, the company has announced. This represented one lost-time injury for each three million hours worked. The injury frequency rate, 0.33 injuries per million man hours, was 40 per cent better than the previous year's rate of 0.55, and marked the safest year in the company's 152-year history.

During 1954, two Du Pont laboratories completed 25 years of operation without a single lost-time injury since start of their organizations. The first to reach this mark was the Rubber Laboratory at Deepwater Point, N. J., on June 30. At that time its 189 employees had completed a total of 3,216,874 injury-free hours. On December 31 it was joined by the Benger Laboratory, Waynesboro, Va., whose 269 employees during the preceding quarter century had compiled a total of 6,248,780 injury-free hours.

Forty-seven Du Pont operations won a total of 61 company safety awards during 1954 as compared with 35 locations winning 49 similar awards in 1953. During the year, 82 Du Pont units were recognized by the National Safety Council for their 1953 performances.

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A PHILADELPHIA DIVISION OF THE Todd Company, Inc., Rochester, N. Y., was presented a safety award by its insurance carrier for achieving more than one million man-hours with only one lost-time accident. The award was made to Norman Sass, manager of the William Mann Division, where the safety record was attained.

SIX PLANTS OF THE B. F. GOODRICH Chemical Company established new safety records in 1954 to keep pace with the over-all record of the chemical industry, it has been announced by the Manufacturing Chemists' Association. Industry lost-time accidents amounted to 3.27 per million man-hours worked, the lowest figure in the history of the industry and an 11% improvement over 1953. The industry's accident severity rate also declined 40% over 1953.

BFG Chemical plants marked up less than two disabling injuries per million man-hours worked. Certificates of safety achievement for 1954 were presented to each plant which completed the calendar year without a lost-time accident: Louisville and Calvert City, Ky., Port Neches, Texas, Institute, W. Va., the Avon Lake, Ohio, general chemicals plant and the Avon Lake Experimental Station.

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THE NAUGATUCK, CONN., FOOTWEAR plant of United States Rubber Co. broke the world's record for safety in the rubber industry. The 5,500 employees set a new mark by working 7,801,624 man-hours without a lost-time accident, bettering the previous world's record in the rubber industry, established in 1953 by the Memphis tire plant of Firestone Tire and Rubber Co.

"The new world's record is the result of daily teamwork between management and employees in the Naugatuck footwear plant," said Wesley M. Graff, director of safety for United States Rubber Co. "Accident-free records such as this can only be made when management gives real leadership to the safety program and employees cooperate every day."

• • •

THE CONTINENTAL CAN COMPANY has received a safety plaque from its insurance carrier for achieving 2,018,708 working hours without accident, a record in the industry.

★ Automatic safety control locks truck when operator touches first step.

★ Provides waist high guard rail protection at all heights—on **4** sides—frees both hands.

★ SAFE-LAD rolls to job easily—on regular elevators—through standard doors. Base tray carries all supplies.

★ Stability tests exceed every requirement suggested for ladders by National Safety Council.

For complete specifications, write—

SAFE-LAD
Manufacturing Company

1001 S. E. Morrison • Portland 14, Oregon

(Use Key # G-32 on Inquiry Card on page 55)

Nuclear Congress

A DOZEN organizations, representing more than 250,000 American scientists, engineers and industrialists, have announced a Nuclear Congress and Atomic Exposition to be held December 12–17 in Cleveland, under the leadership of Engineers Joint Council.

The Nuclear Congress represents the biggest single project yet undertaken by the combined engineering societies of the nation. In addition to covering the interrelations of all branches of nuclear sciences and engineering, both events have the active support of private enterprise and of government in the power and other atomic fields.

The basic objective is to launch a continuing program of interchange of information on the developing applications of nuclear science by the engineer for vital national benefits involving industry, agriculture, medicine and the public welfare.

Sponsors of the forthcoming Congress called attention to the stimulus given industry plans by the recent announcement of the government that the Atomic Energy Commission has called for proposals by private companies on construction of reactors for industrial purposes. It was stated by the government that help would be given companies presenting acceptable proposals. Power plants are only one of the many projects of the future to be discussed.

In announcing the world's first major Atomic Exposition, Professor Dodge said: "The Exposition will for the first time bring together under one roof all the major developments in industry and science related to atomic energy. This includes not only atomic power developments, but also the tremendously expanding applications of atomic by-products in all industrial fields. Suppliers to the various atomic industries are being invited to display their latest developments relating to peace-time applications.

"While attendance will be drawn chiefly from management and technical professions, it is planned to open the Exposition to the public at certain hours."

inside the trade

A. E. Hohman, since 1944 advertising manager of Blaw-Knox Co., of Pittsburgh, has been named as coordinator of special sales activities. In his new position Hohman will evaluate advertising, sales promotion and special marketing activities for the company's sales department. He will be succeeded as advertising manager by Paul F. Vollmer, who has been assistant advertising manager for the past six years.

Purchase of Electric Blower Company has been announced by Stanley Berns, president of Pullman Vacuum Cleaner Corporation. Electric Blower will be a division of Berns Manufacturing Corp. and will widen the range of Pullman Vacuum by giving it a more complete line of commercial cleaning equipment. Frank MacCallum, who founded Electric Blower in 1907, will join Berns Manufacturing Corporation in an advisory capacity.

William C. McCoy, former Deputy Chief of the Suffolk County Fire Training School, has been appointed Technical Director of the Fyr-Larm Co., Inc., of Summit, N. J. In his new post, Chief McCoy will direct the technical activities of the manufacturer of self-powered, automatic fire alarms for use in residential, industrial and institutional type buildings.

Plax Corp., originators of the plastic bottle and producers of oriented polystyrene and methacrylate sheet, has relocated its Chicago and New York offices. New addresses and telephone numbers are: 1607 Howard St., Chicago 26, BRiangate 4-1332; and 500 Fifth Ave., New York 36, PEnnsylvania 6-9354.

A group of Cleveland investors headed by R. E. Britt has entered the automation field with the purchase of the controlling interest in The Tipp Manufacturing Company, Tipp City, Ohio. The company manufactures conveyor systems. R. E. Britt, president, has had 25 years of experience in the conveyor field. He is also president of Central States Industrial Supply Company of Cleveland, and several other industrial firms.

The Tipp Manufacturing Company will immediately expand its conveyor sales organization under the direction of the Cleveland office. Ted Black, founder of the 17-year old company, will handle manufacturing and engineering operations as vice president and general manager in Tipp City, Ohio.

Robert S. Stevenson, executive vice president of Allis-Chalmers Manufacturing Co. since July, 1952, has been elected president, succeeding the late William A. Roberts, who died April 12. A graduate of Washington State College, Stevenson started with Allis-Chalmers in 1933 and has held many positions with the company, being appointed executive vice president in 1952. In the latter capacity he has devoted much of his time to working with utility and industrial groups.

At the annual meeting of the Board of Directors of Broderick & Bascom Rope Co., general offices in St. Louis, Joseph H. Bascom, Executive Vice-President and Treasurer was elected President of the firm. C. E. Bascom, retiring president, was elected Chairman of the Board of Directors. A. A. Grosse, Secretary and Assistant Treasurer, was made Secretary and Treasurer.

H. H. Warren, former assistant manager of the New York branch sales office of The Electric Storage Battery Company, has been appointed assistant sales manager of the company's Exide Industrial Division with headquarters in Philadelphia. He has been associated with the company in New York since 1921.

William L. Krapf, Manager of Bulkley, Dunton Processes, Inc. of New York City, has announced the appointment of Paul S. Cooper of Westport, Conn., to handle the complete line of colloidair separators for the clarification of waste and process liquids for industry and commercial uses. Cooper will serve all industries in Connecticut, Massachusetts, Rhode Island, Vermont, New Hampshire and Maine.

The Hammel-Dahl Company of Providence, R. I., manufacturers of automatic control equipment, announces the appointment of the Russell F. Clark Company, 1404 Clark Building, Pittsburgh 22, Pa., as their new sales and service representatives in Western Pennsylvania and part of West Virginia.

Production lines have started rolling in the manufacturing laboratories of Fisher Scientific's new reagent-chemical plant on a 9-acre site in Fair Lawn Industrial Park, N. J. This is said to be the first plant in America designed exclusively for reagent chemicals: the pure, laboratory-analyzed chemicals used by researchers and scientists.

The Board of Directors of Alan Wood Steel Company has announced the election of Harleston R. Wood as President and Chief Executive Officer of the Company, effective August 1, 1955.

Mr. Wood will succeed John T. Whiting who has been President of Alan Wood Steel since 1939 and President and Chair-

man of the Board since 1941. Mr. Whiting will continue as Chairman of the Board and a member of the Board of Directors.

Prior to his election, Mr. Wood was Vice President in Charge of Planning and Development since 1954. Mr. Wood joined the Company in 1938 and served in various positions in the metallurgical and operations departments prior to World War II. After four years in the Navy, Mr. Wood returned to the Company where he served successively as Sales Development Engineer and Manager of Planning and Development.

The American Pulley Company of Philadelphia announces the purchase of the assets of Safeway Industrial Equipment Corp., Chicago, Illinois, manufacturer of manually and electrically operated hydraulic lift trucks, complementing its own line of hand trucks, barrel cradles and industrial wheels. It is planned to merchandise these lift trucks under the trade name of "American Safeway" through the nation-wide American Pulley distribution network. Mr. Harry T. Carroll, former President of the Safeway Industrial Equipment Corp., has joined the American Pulley Company and will operate out of the Chicago address, where stocks will continue to be maintained. In the near future, manufacturing and engineering will be transferred to the American Pulley facilities in Philadelphia.

Twenty-four representatives from 18 sanitary supply companies attended the 10th "Blue Chip" Clinic on the Multi-Clean Method held for Multi-Clean Distributors May 9 through 12 at the company's offices and plant, 2277 Ford Parkway, St. Paul 1, Minnesota. Ten states and Canada were represented by those in attendance. The program, under the direction of the company's president, N. H. McRae and E. C. Hesli, sales manager, included the sales promotion and application of the Multi-Clean Method of Maintenance.

Conde Hamlin, formerly executive vice president, has been elected president of DeWalt Inc., it was announced by the firm's Board of Directors. A subsidiary of American Machine & Foundry Company, DeWalt is a major producer of woodworking machinery for industrial and homeshop applications.

Mr. Hamlin has been executive vice president of the company since November of last year. Prior to that time, he had been a director and vice president in charge of sales for five months, after having served as general sales manager since August, 1952.

Arthur W. H. Towne has been appointed Sales Manager for the Industrial Division of T. R. Finn & Company Inc., Hawthorne, New Jersey, specialists in shock and vibration control. Mr. Towne is currently engaged in establishing a national sales organization in both the construction and general industrial fields.

J. R. Hoover, president, B. F. Goodrich Chemical Company of Cleveland, Ohio (a division of The B. F. Goodrich Company), was elected chairman of the board of directors of the Manufacturing Chemists' Association, Inc., at its 83rd annual meeting. Mr. Hoover succeeds Fred J. Emmerich, president of Allied Chemical & Dye Corp., who continues as a director of the association.

William C. Foster, full-time president and a director of the association, was re-elected, as was M. F. Crass, Jr., full-time secretary-treasurer.

William H. Ward, vice president of E. I. du Pont de Nemours & Co., Inc., was elected chairman of the executive committee.

Howard S. Bunn, vice president, Union Carbide and Carbon Corporation, was re-elected as a vice president of MCA. Also elected a vice president was J. Albert Woods, president, Commercial Solvents Corporation.

T. Seddon Duke was re-elected president of the National Fire Protection Association at the final session of the fire safety group's annual meeting. Mr. Duke, president of the Star Sprinkler Corp. Philadelphia, first took office as president of the NFPA last year.

Other officers also re-elected for another year were: 1st vice president, John A.

Safety and Special Purpose
Plain or Reflectorized
SIGNS for EVERY NEED!
SAFETY FIRST — BE — CAREFUL
NOTICE THESE DOORS MUST BE KEPT CLOSED
BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
THINK ACCIDENTS ARE AVOIDABLE FORGET THE ALIBI.
HELP KEEP THIS PLACE CLEAN
EXIT
DANGER — NO — SMOKING
WARNING CURRENT —ON—
CAUTION KEEP AISLES CLEAR
NO PARKING AT ANY TIME
EXPLOSIVES
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MEN WORKING
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(For details, use Key # G-34 on card on page 55)

Neale, chief engineer of the National Board of Fire Underwriters, New York; 2nd vice president, Chief Henry G. Thomas, Hartford (Conn.) Fire Department; secretary-treasurer, Hovey T. Freeman, president of Manufacturers Mutual Fire Insurance Co., Providence; chairman, NFPA board of directors, Richard E. Vernor, manager, fire prevention department of the Western Actuarial Bureau, Chicago.

The A. J. Ellerker Co., 63 Pitt St., Sydney, N.S.W., Australia, has announced its availability in representing American manufacturers of safety equipment. Alan R. Ellerker, on his most recent visit to this country, delayed his departure to attend the Greater New York Safety Convention. The company is a prominent supplier of specialized fire fighting equipment in Australia and has contact with fire protection and safety personnel.

Appointment of John F. Whitcomb as general sales manager of the coated abrasives and related products division and Richard L. Sheppard as general sales manager of the cellophane tape division has been announced by Minnesota Mining & Manufacturing Co. Since 1951 Whitcomb has been eastern regional sales manager with headquarters in New York. Sheppard has been sales manager of stationery trades since 1950.

Maico, Co., Inc., industrial hearing instrument manufacturers and hearing conservation consultants, have been named sales distributors for the new Burgess-Manning Acousti-Room for audiometric testing, recently developed by the Architectural Products Division of Burgess-Manning Company.

In line with their proposed expansion program, Solar Electric Corporation of Warren, Pennsylvania, has announced the recent appointment of Walter J. Dremann as President. In 1949, Mr. Dremann came to the company as Chief Engineer for all incandescent and fluorescent lamps. In 1953 he was promoted to Vice President and General Manager.

Mr. Carl Lamm, President of the Lamco Chemical Co., Inc. is making a trip to Germany where he will collaborate with a staff of research chemists in the development of advanced theories for the manufacture of floor maintenance products. He will be working with a company, Gottlob Epple, Mineralolwerk, Stuttgart Bad-Canstatt, with which he was associated for many years, and will return in late July.

SAFETY APPOINTMENTS

A division-wide safety supervisor has been appointed for Tide Water Associated Oil Company's western division, Thomas L. Wark, vice president and division general manager, has announced. Samuel O. Bacon of Concord, Calif., has been selected for the new position. For eleven years he has been the safety engineer of the company's nearby 1,500 man Avon Flying A Refinery which currently holds the California safety record of 4,426,595 man-hours without disabling injury.

He is a member of the American Petroleum Institute's safety committee and the Western Oil and Gas Association's safety committee. He is active in Contra Costa County (Calif.) safety activities.

C. P. "Jack" Shirey of Beaumont, Texas has been promoted to the newly created position of Training and Safety Manager for Gulf States Utilities Company and Frank W. Jones of Baton Rouge, Louisiana has been promoted to succeed him as Safety Director according to an announcement by Roy Nelson, GSU President. Mr. Jones was formerly general line foreman of the company's Baton Rouge division.

DANGER!
CLEANING PARTS WITH INFLAMMABLE LIQUIDS CAN CAUSE DISASTROUS FIRES!
KLEER-FLO SOLVES PROBLEMS WITH SAFETY EQUIPMENT AND HIGH FLASH POINT SOLVENTS
SAFE!
CLEAN PARTS 3 WAYS — SAFELY!
1. Continuous Flow Hose
2. Air Agitated Soaking Tank
3. "Super Power" Jet Air Gun
Kleerflo SUPER CLEANMASTER MODEL 50
Adapted for Critical Cleaning of Automatic Transmissions and Power Steering Units
A continuous flow pump strains, filters and ejects abrasive foreign material and returns clean Kleer-Flo Hi T Degreasol or M-467 Cleaning Fluids through the semi-rigid hose to the upper soaking tank.
Fire hazard is reduced by a quick action fusible link in self-closing cover.
Efficient patented electric pump is driven by a fan-cooled brushless, sparkless motor.
Kleer-Flo Model 30 (less Jet Air Gun) also available
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America's Foremost Producer of Parts Cleaning Equipment
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(For details, use Key # G-35 on card on page 55)

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What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE & PRODUCTION

DEODORIZING GERMICIDE

(Use Key # 944 on Inquiry Card on page 55)

A NEW MULTI-PURPOSE germicide with the fragrance of meadow mint was announced recently by The C. B. Dolge Co. Called "Mintol," this new product is said to combine unusual germicidal properties with refined deodorizing action and can be applied freely wherever bacteria menace or odors offend.

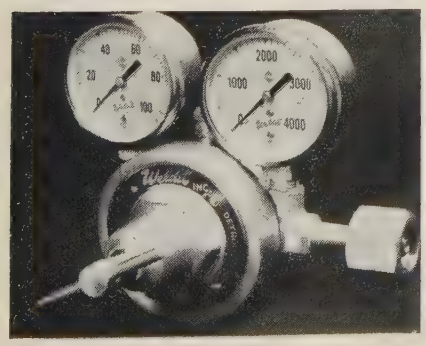
It has met successfully the new "Use Dilution Confirmatory Test" on S. Cholerasuis in accordance with the current Food and Drug Administration Testing methods and has been awarded a coefficient of 9. It dilutes most economically: 1-100 parts of water for disinfecting; 1-200 for deodorizing.

GAS CONTROL REGULATORS

(Use Key # 945 on Inquiry Card on page 55)

WELDIT, INC. has introduced their new "Duo-Trol," the new Weldit Series 50 Duo-Control Regulator for Oxygen (illustrated) and all Fuel Gas control. Designed to meet the exacting requirements of modern industry, the Duo-Trol is precision built to take rough handling while giving the utmost in accurate regulation. Compact in size, with forged body and bonnet, it is adapted for both light and heavy duty.

The simple design is rugged, safe and dependable and is easily repaired with standard tools. The full view gauges are easily read and the new filter gives maximum seat protection. The Duo-Trol Safety automatically resets itself. Guaranteed steady flow at all working pressures, and is adaptable for use with a flowmeter.

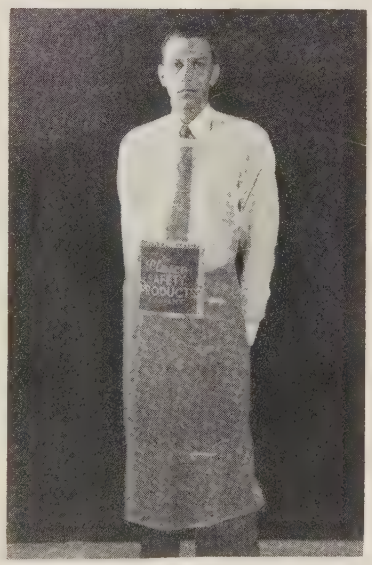


PORTABLE WATER TANK

(Use Key # 946 on Inquiry Card on page 55)

AS A MEANS of providing cool, fresh water and clean paper cups to men on road and construction jobs, field workers and others away from a sanitary supply of water, the Champion Sprayer Co. is offering a back-pack type of drinking water tank. The 5-gallon tank is made of galvanized or stainless steel with a chrome-plated brass push-button faucet.

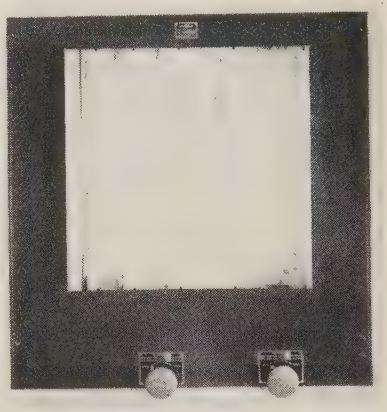
The unit includes a dispenser for paper cups, adjustable back straps, a top handle, and a shield to protect the carrier from chill and condensed moisture.



SAFETY SLOGAN APRONS

(Use Key # 947 on Inquiry Card on page 55)

THE USE OF a special vinyl ink makes it possible for the Plasco Safety Products Co. to imprint protective vinyl plastic aprons with safety slogans, company names, or the individual's name. The ink becomes a part of the apron and resists wear or deterioration. The aprons provide protection against a wide variety of liquid hazards, including chemicals, oils and some solvents.



EXPLOSION-PROOF LIGHTING FOR FLOWMETERS

(Use Key # 948 on Inquiry Card on page 55)

WHAT IS believed to be the first explosion-proof, fluorescent direct lighting system developed for industrial and laboratory flowmeters has been announced by Commercial Research Laboratories, Inc. It is now available as special equipment on this manufacturer's single-stage and multiple-stage flowmeters that are used to meter combustible liquids. Direct illumination of the metering tubes and the plastic, translucent scales in the flowmeter is provided from the rear by standard 20-watt fluorescent lamps. Two lamps are used in multiple-stage flowmeters and one in the single-stage model.

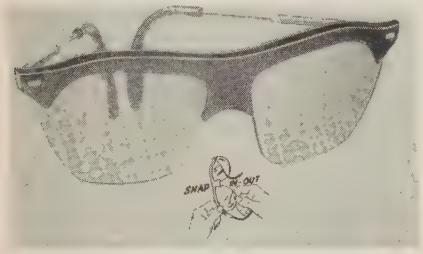
At the time unit is assembled, the ends of lamps are tightly sealed, by means of compound, into pre-fabricated housings, making the lamps completely explosion-proof. The housings are in turn fastened with brackets to a steel shell which surrounds the entire explosion-proof lighting unit. This shell, forming the back panel of the flowmeter, can be easily removed intact to allow cleaning or lamp replacement.

Proper lighting density is provided by a diffusion screen midway between the special translucent scales and the lamps. Should greater visibility be desired, different colored scales can be supplied, with each color keyed to a specific metering liquid.

ANTISEPTIC DISINFECTANT

(Use Key # 949 on Inquiry Card on page 55)

AN ODORLESS, water-soluble antiseptic and disinfectant is made by the Natriphene Co. in tablet and dry powder form. It is used extensively as an additive to cutting oils to prevent dermatitis and to keep the oils clean and sanitary. The product, which, it is claimed, is effective against both bacteria and fungus organisms, is also used in foot baths to control athlete's foot, for disinfecting rubber boots and safety equipment, and for washroom and general plant sanitation and odor control. While odorless, the product controls objectionable odors by eliminating the bacteria and fermentation that cause them. This versatile product can be used in kitchens, recreation rooms, toilet and locker rooms, dishwashing and food storage compartments to cleanse, disinfect, and deodorize.



EXECUTIVE SAFETY SPECTACLES

(Use Key # 950 on Inquiry Card on page 55)

INTERCHANGEABLE LENSES, which are snapped into place without tools, permit the smartly styled frame of these new Executive Safety Spectacles to serve more than one purpose. For eye protection from impact, clear lenses are provided. For average sunlight and glare, light green lenses are available; for bright sun and extreme glare, medium green lenses. Also available, are gold lenses for increased visual acuity. All lenses are optically perfect, shatterproof Methacrylate. They are curved and oversize for extra protection, and the frame itself is curved to form-fit the forehead. One size comfortably fits any man because the "Retrax" temples slide in or out to permit each wearer to adjust his own spectacles. The "Universal" nosepiece rests lightly on the bridge of the nose without "pinch" or pressure. Each pair of spectacles has its own leatherette case large enough to hold extra sets of lenses in their individual pouches. Made by Watchemoket Optical Co., Inc.

TANK-TYPE CARBON REMOVER

(Use Key # 951 on Inquiry Card on page 55)

A NEW AND IMPROVED carbon remover developed by Brulin and Company offers practical, efficient application. Compounded for effective action with maximum safety, "Multisol" is said to cut time by one-half. It is non-flammable, free of caustic, non-corrosive to aluminum, brass, zinc, tin plate and magnesium.

Multisol is a two-layer liquid for use in dip tanks. The upper layer is a floating

seal to prevent escape of solvent vapors, reduce drag-out loss of material and to rinse the parts as they are removed from the solvent.

The lower layer is a combination of solvents, penetrating agents and emulsifiers formulated to break the bond between metal surface and carbon, paint, grease and gums. Deposits thus released fall to the bottom of the cleaning tank. Potency of the solution is not affected. No mixing is required—it is shipped ready for use and is always used cold.

Multisol is said to be able to remove practically any soil or finish from metal. It is particularly efficient in cleaning fuel pumps, carburetors, brake drums, engine blocks, pistons and transmission assemblies. In reprocessing electrical motors, it quickly strips old insulation varnish and removes paint or varnish from end bells of motors. Railroad applications include maintenance of Diesel engines, cleaning journal boxes, bearings and gears. Its speed and efficiency make it suitable also in the petroleum and marine fields.

SAFE RAG STORAGE

(Use Key # 952 on Inquiry Card on page 55)

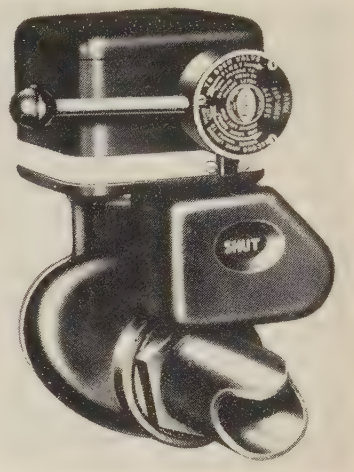
BOTH GOOD maintenance and fire protection are features of a combination rag storage bin made by the J. D. Polis Mfg. Co. The bin is partitioned into two sections for accessible storage of clean wiping cloths and convenient disposal of dirty towels and oily rags. Constructed of galvanized iron, the bin has a fusible link that melts in case of fire, automatically closing the cover. Use of the convenient bin provides good storage for both clean and used cloths, prevents serious fires caused by spontaneous ignition of oily waste, and promotes good housekeeping by offering safe storage of unsightly soiled rags.

COMBUSTION SAFEGUARD MANUAL RESET VALVES

(Use Key # 953 on Inquiry Card on page 55)

FIREYE SERIES 81G Manual Reset Valves are especially designed for use with Fireye Flame Failure Safeguard Systems for use in shutting off the flow of fuels in oil and gas burners in cases of faulty operation. The System shuts off the valves in the event of: flame failure, fan or pump failure, loss of electrical power, or faulty operation of pressure or temperature limit switches, time delay relays, or other interlocks in the burner control circuit.

The positive, leakproof closing action of these valves is said to provide maximum protection against burner explosion

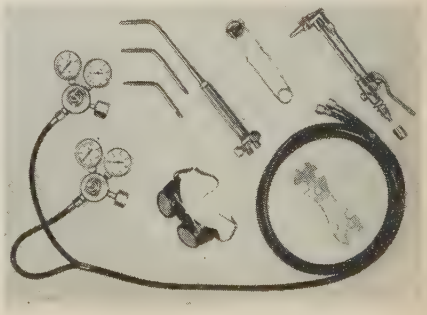


hazards. Their foolproof manual reset mechanism prevents re-opening unless the electric holding coil is energized. Full area port and straight-through body design offers higher capacities with lower pressure drops. Extra-power holding coils, glass insulated for longer life, are provided, together with a corrosion-proofed latching assembly. These new features plus heavy duty construction, assure trouble-free operation with minimum attention on the most rugged industrial service. The new valves are UL and FM approved. They are available in sizes from 1" to 4" for use with manufactured, natural or mixed, or LP gas, and in 1" and 1¼" sizes for use with pre-heated #5 or #6 oil.

WELDING & CUTTING KIT

(Use Key # 954 on Inquiry Card on page 55)

A NEW, low-cost, high quality outfit for welding, cutting, heating and brazing is announced by Dockson Corp. Suitable



for small plants, hobby work, home shops, farms, service stations, sheet metal plants, plumbers and heating contractors, this outfit will weld up to 3/16" thickness and cut to 1/2" thickness.

Known as the #600 Outfit, this set contains the following standard catalog items: 1-#55 Oxygen Regulator, 1-#55 Acetylene Regulator, 1-#6 Welding Torch, 1-each of #1-3-5 E type tips, 1-C6 Cutting Attachment with a 1C tip, 1-#180 Lighter, 1-#970 Outfit Wrench, 1-#76-19-5 Goggles and 12 1/2 ft. of 3/16" Siamese Hose with standard couplings. Extra cutting or welding tips are available.

All parts of the outfit are standard and easily replaceable. The torches are full size and contain the improved Dockson rubber "O" ring seals on the mixing chamber. The regulators are solid forged brass body and bonnet with your choice of standard tank fittings.

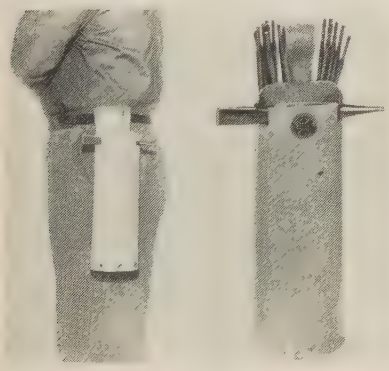
COLOR BLINDNESS TESTS

(Use Key # 955 on Inquiry Card on page 55)

A SIMPLE, inexpensive test now makes it possible to determine quickly if a person has a color vision deficiency, and if so what type and how serious it is.

American Optical Company's new H-R-R Pseudoisochromatic Plates, produced after a 12-year research study, and by one of the most complex commercial printing jobs ever undertaken, make possible a color blindness diagnosis without a battery of costly instruments, and a long, highly-technical procedure. The AO H-R-R test is so simple any person, even one who is color blind himself, can learn to administer it in a few minutes.

The test will have countless applications in the fields of industry, business and education, and will pave the way for establishing new standards in job rating, vocational guidance and occupational safety.



WELDER'S TOOL CASE

(Use Key # 956 on Inquiry Card on page 55)

THIS COMBINATION case for rods and chipping tools is manufactured by Atlas Welding Accessories Co. The case is divided into two separate compartments for welding rods and chipping tool. It fastens on the belt and is designed to enable the wearer to reach for and extract either rod or hammer without looking.

Construction is of riveted, full grain cowhide leather with heavy belt loop. It has a solid wood bottom that the welding rods will not wear through.

OUTDOOR LIGHTED POSTERS

(Use Key # 957 on Inquiry Card on page 55)

THE OUTDOOR Electra-matic Display provides illuminated posters for safety. It can be installed at the gate, in the parking lot, or some other location outside the plant. Illustrated messages, jumbo size, are brilliantly illuminated from behind by fluorescent lights. Available from L. C. Howe, the equipment and service provide a safety message each month.

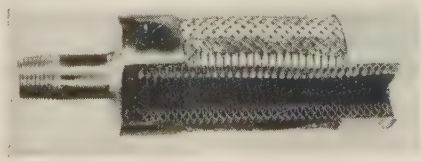
Two models are available. The Two-Way Electra-matic outdoor display has a wrap-around plexiglass face on each side and two inner plexiglass panels, stainless steel box with stainless steel frames, screened ventilating louvres, doors hinged at bottom for quick change of messages, three 38-watt daylight 48" slimline fluorescent tubes for 110–120 volt, 60-cycle AC, over-all size 53 1/4" × 36 1/2" × 10" to accommodate messages 30 1/2" × 46".

The One-Way Electra-matic has a single wrap-around plexiglass face and inner plexiglass panel, but is similar to the Two-Way in other respects.

WATER HAMMER ELIMINATOR

(Use Key # 958 on Inquiry Card on page 55)

THE TECHNIFLEX Corporation announces the release of its newly designed Water Hammer Eliminator for domestic and small commercial piping. Units are currently available with 1/2" and 3/4" male I.P.T. connections. From a design standpoint the Techniflex unit takes advantage of the resiliency of seamless convoluted metal hose in combination with the compressibility of the air pocket. The unit is made of brass and bronze components and provided with an outer bronze braid covering for reinforcement with a resultant burst pressure of 900 pounds per square inch minimum. Field tests in actual installations over a period of three years have yielded satisfactory results on piping systems which formerly gave considerable trouble.

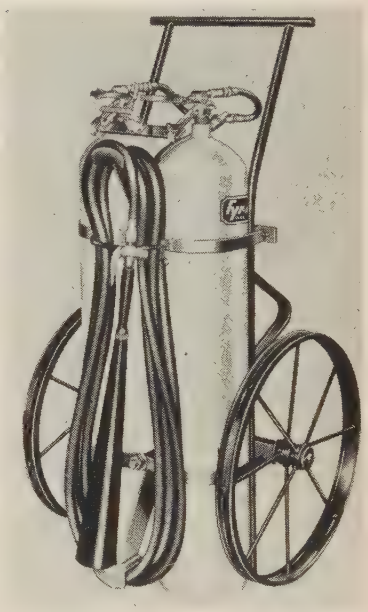


ALUMINIZED PIPE JACKETING

(Use Key # 959 on Inquiry Card on page 55)

ALUMINIZED pipe jacketing which is resistant to fire, acid and water, has been developed by the textile division of United States Rubber Co. Made of aluminum foil laminated onto vapor-proofed asbestos cloth, it can be used to cover pipe insulation in heating, piping, refrigeration and air conditioning systems in electric utility and industrial plants and commercial and institutional buildings. Called Asbeston pipe insulation jacketing, it requires no painting.

The aluminized jacketing is easily cleaned and does not absorb odors, properties which suit it for use in breweries, food processing plants and laboratories. A square yard weighs 12 ounces, compared to standard weights of 22 to 36 ounces for asbestos jacketing cloths in general industrial use.



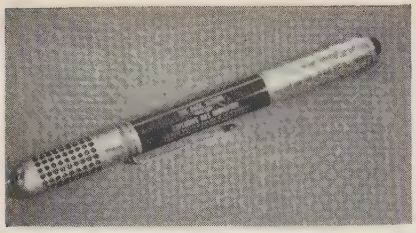
CARBIDE DIOXIDE ENGINES

(Use Key # 960 on Inquiry Card on page 55)

A NEW LINE of ruggedly constructed carbon dioxide wheeled engine fire extinguishers is now in production at the Fyr-Fyter Company. They are designed for the bigger blazes in oil, gas and other volatile liquids as well as large live electrical fires.

Cylinders are capped by lever operated valves which permit the immediate discharge of the liquid carbon dioxide. The new engines are made in 50, 75 and 100 lb. capacity models, all of which are approved by Underwriters' Laboratories. The frames are of solid welded construction, and each unit is balanced to assure ease of maneuverability to and from the scene of a fire.

The twin 50 lb. cylinders on the 100 lb. model (illustrated) can be operated independently of each other, or in tandem. The manifold assembly on the 100 lb. model consists of high-pressure rubber hose fittings which are able to withstand rough use. The design of all three models simplifies servicing and recharging.



EXPLOSIVE GAS INDICATOR

(Use Key # 961 on Inquiry Card on page 55)

AN EXPLOSIVE GAS indicator hardly larger than a fountain pen promises economy, compactness, and a simplicity of operation that permits its use by anyone, even without technical training or knowledge. The Page Sensor Pocket Model Explosive Gas Indicator has been introduced jointly by Hogart Engineering Co. and Davis Emergency Equipment Co., Inc.

This Pocket-Size gas indicator will be particularly useful for utilities, petroleum companies and others dealing with explosive gases and vapors. It is intended for use where a quick spot check for combustible gases or vapors is needed—in manholes, tanks, tank cars, etc. It is completely self-contained, operating on 2 small pen light batteries.

The operator merely removes the indicator from its plastic case, depresses the light bulb, which acts as a switch. When the switch is on, the bulb glows dimly. If there is a trace of combustible gas or vapor in the atmosphere, the light begins to flash intermittently. As the concentration of combustibles increases the flashing becomes more rapid, until a steady bright light indicates the atmosphere is hazardous.

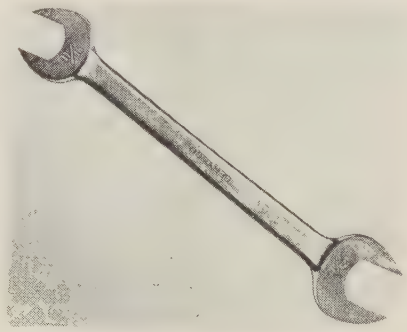
PORTABLE PUMPS

(Use Key # 962 on Inquiry Card on page 55)

VALUABLE, VITAL defense against fires and floods that cause costly and irreparable damage is now provided by the Mall Tool Company's new portable pumps. The new Model GP2 (illustrated) is an excellent fire-fighting weapon, capable of safeguarding farms, small buildings and isolated structures. Speed, light weight, simplicity, dependability and versatility are features of this positive-priming pump. Completely self-contained, the GP2 is powered by a 5 horsepower, 2 cycle gasoline engine.

The pump starts working the instant its suction hose is placed in water, even though the pump case is only partially filled. Its non-clogging, self-cleaning impeller will handle any kind of water, despite muddiness. It can pump 4800 gallons per hour against a 50-foot head, through 25 feet of hose (furnished with the pump) with a 90-foot stream. Additional lengths of hose can be clamped together quickly. The model is equipped with a 12½-foot suction hose and hose nozzle. Pipe thread connections are standard 1½".

For draining flooded basements and excavations, the Model PSP-602 Pneumatic Sump Pump can be submerged completely in water without impairing its effectiveness. It is powered by an air motor. This self-priming, non-clogging centrifugal type unit has a capacity of 15,000 gallons per hour at 90 psi. with the discharge hose level with the pump. The discharge hose is 12 feet long. The pump develops water pressure for a 140-foot static head. Like the GP2, this model starts pumping immediately upon contacting water. It has an automatic oiler and standard 1½" pipe thread connections.



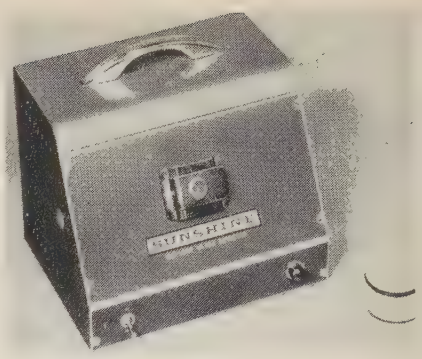
FORGED NON-SPARKING WRENCHES

(Use Key # 963 on Inquiry Card on page 55)

FORGED beryllium copper safety wrenches—as much as 46 percent lighter than previous cast models and as strong as some high-grade steel wrenches—have been added to the Berylco line of non-sparking safety tools by The Beryllium Corp. The new open-end wrenches are the first of a series of forged non-sparking tools.

The safety wrenches are intended for use in hazardous locations where accidental sparks might result in fire or explosion. Beryllium copper is used because it is age hardenable, and can be heat-treated to a much greater strength than other copper base materials.

Forging now adds the additional strength-giving properties of a wrought structure. Compared to the cast product, the forged wrenches are slimmer, stronger and lighter in weight. Section thickness, as well as torque values, are on a par with high grade steel tools. Compactness makes the tools easier to use in close quarters. Higher strength of the forgings should extend tool service life beyond that of cast models. The new forged wrenches are available in various combinations of opening sizes ranging from $\frac{7}{16} \times \frac{1}{2}$ inch to $1\frac{1}{16} \times 1\frac{1}{4}$ inch.

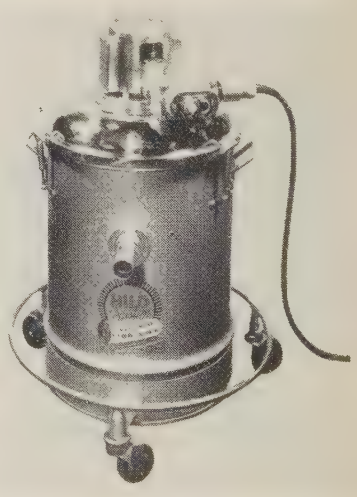


MERCURY VAPOR MONITOR

(Use Key # 964 on Inquiry Card on page 55)

THIS MERCURY VAPOR detector operates on the principle that selenium sulphide coated paper will darken in the presence of mercury vapor. The degree of darkening is dependent on the mercury concentration, the time of exposure, the temperature, and the velocity of the air passing over the selenium sulphide. Constant temperature is maintained by an electric heater and thermoswitch controller. An electric, motor-driven blower supplies a constant air velocity. With the use of a color comparison chart, supplied with the detector, selenium discoloration is converted to mercury vapor concentration.

This continuous-sampling monitor safeguards the health of workers by providing a record of mercury vapor concentrations at all times. Suitable for mercury operations in the manufacture of electric equipment, instruments, bulbs and glassware, and in the chemical, mining, fur, salt and smelting industries, in laboratories, etc.



EXPLOSION PROOF VACUUM

(Use Key # 965 on Inquiry Card on page 55)

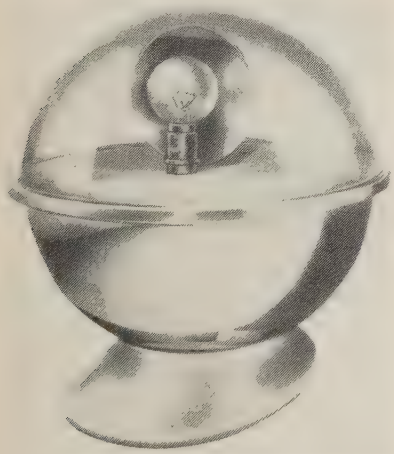
A WET AND DRY pick-up vacuum cleaner for use in most industries where electric sparks are a fire hazard is announced by Hild Floor Machine Co. The industrial vacuum cleaner industry has long recognized the need for this type of machine, and the development of a totally enclosed, specially designed motor makes this explosion-proof vacuum cleaner now possible.

TRANSFER MASK

(Use Key # 966 on Inquiry Card on page 55)

TO PROVIDE continuous respiratory protection even while moving from one plant air connection to another, the Acme Protection Equipment Co. has developed a new transfer mask. The unit consists of a Full-Vision face piece, a canister and a supplied-air hose connection.

The wearer uses compressed air when he is connected to such a supply, but the unit automatically transfers to canister protection if the compressed air supply is shut off, if the hose is cut or kinked, or if the wearer wants to move to another location or compressed air plug-in station. The equipment uses a standard valve in the canister and a synchronized "T" valve connected at the junction of the face piece and hoses.



INDUSTRIAL WARNING LIGHT

(Use Key # 967 on Inquiry Card on page 55)

A NEW TYPE of emergency light for industrial plants has just been announced by Trippe Mfg. Co. Called the "Hi-Ball" this light can be mounted to cover a wide area in any working space where an emergency might arise. In combination with a horn or siren an instant alarm can be given with both sound and sight.

The unit plugs into any convenient 120 volt A.C. outlet and requires no transformer. Makers claim this is the most powerful light of its type. Uses a 1,000 hour life bulb around which a silvered parabolic mirror in sharp focus is revolved at 60 r.p.m. Heavy plastic dome can be supplied in red, blue, green, amber or clear.

NON-SKID COATING

(Use Key # 968 on Inquiry Card on page 55)

A NEW SEMI-PLASTIC non-skid coating for stairs, steel floor plates, ramps, inclines, shower and locker room floors, has been announced by The Garland Co. The coating is applied with a trowel on wood, metal or concrete. According to the manufacturer, its abrasive surface eliminates falling, slipping and injuries on stairs, wet or slippy floors. The manufacturer also points out that Non-Skid eliminates time loss due to accidents.

The coating is formulated with chlorinated rubber for extra adhesion and flexibility. It is acid, alkali and grease resistant and is excellent for use in food plants, packing plants, factories, schools, pools or boats. The manufacturer also states that Non-Skid Coating will stand continual scrubbing and washing. This coating is made in four colors.

ANTISEPTICS IN SQUEEZE TUBES

(Use Key # 969 on Inquiry Card on page 55)

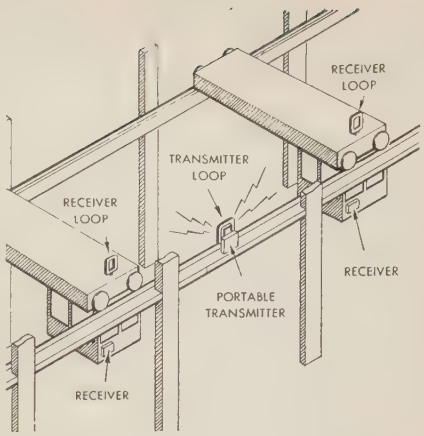
CLEAR POLYETHYLENE tubes with a "squeeze-to-use" action for dispensing antiseptics are the latest development in Unit packs for industrial first aid kits. Designed to take the place of antiseptic swabs, merthiolate is packaged in the new Unidrop tubes by E. D. Bullard Company. Two sizes are available; the 4cc tube, packed four to a single-Unit pack; and the 2cc, packed in ten's.

Antiseptics packed in these tubes are easy to apply, and eliminate the possibility of irritating a wound with a cotton swab. By gently squeezing the end of the tube, the antiseptic can be directed into or around the edges of the wound, one drop at a time. The addition of the Unidrop Unit pack makes available a total of 120 individual Units for use in Bullard Custom-Designed, Safety Green First Aid Kits.

WARNING SYSTEM FOR CRANE RUNWAYS

(Use Key # 970 on Inquiry Card on page 55)

A NEW CONTROL system for crane runways is being readied for industry by Femco, Inc. Developed primarily as a safety device, the new system permits workers to attend to a disabled crane without danger from other cranes approaching on the same runway. The system automatically gives warning of the approach or shuts off the movement of an



oncoming crane. Distance at which the warning or shut-off action is effective is adjustable from one to twenty feet. Other similar applications to protect workers are practicable.

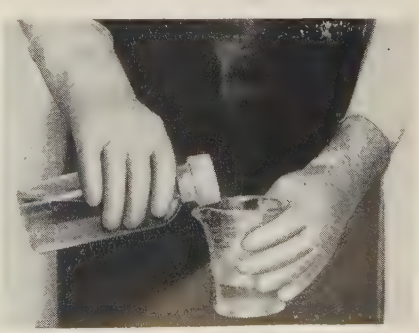
Equipment consists of a compact receiver and receiver loop for each crane or other fixed location and a portable transmitter with transmitter loop to be positioned wherever temporary protection is required. The transmitter and receivers are tuned to the same carrier frequency. At a predetermined proximity, sufficient energy is transferred from one to the other to actuate the impulsed receiver by the high steady output of the transmitter. All of the equipment is of "fail-safe" design so that any failure of any part will cause a warning signal.

Power on the crane is normally drawn from the "trolley" circuit used to operate the cranes. The portable unit is battery operated. All equipment is engineered for heavy duty industrial use with more than ample protection and resistance to dust, moisture and shocks of all kinds.

FLOCK-LINED GLOVE

(Use Key # 971 on Inquiry Card on page 55)

A COMPLETE innovation in industrial gloves of flock-lined Neoprene is now being introduced to industry by the Pioneer Rubber Company. The new Stanzoil NS-35 features a lining of thousands of tiny cotton particles bonded to the inside of the Du Pont milled Neoprene outer glove. Besides giving the wearer a maximum amount of comfort without decreasing finger dexterity, the NS-35 has an effective molded non-slip grip on fingers and palm. It is suitable for chemical work, assembly, inspection, parts handling, photography, polishing and painting operations, leather and textile processing, and laundry work.



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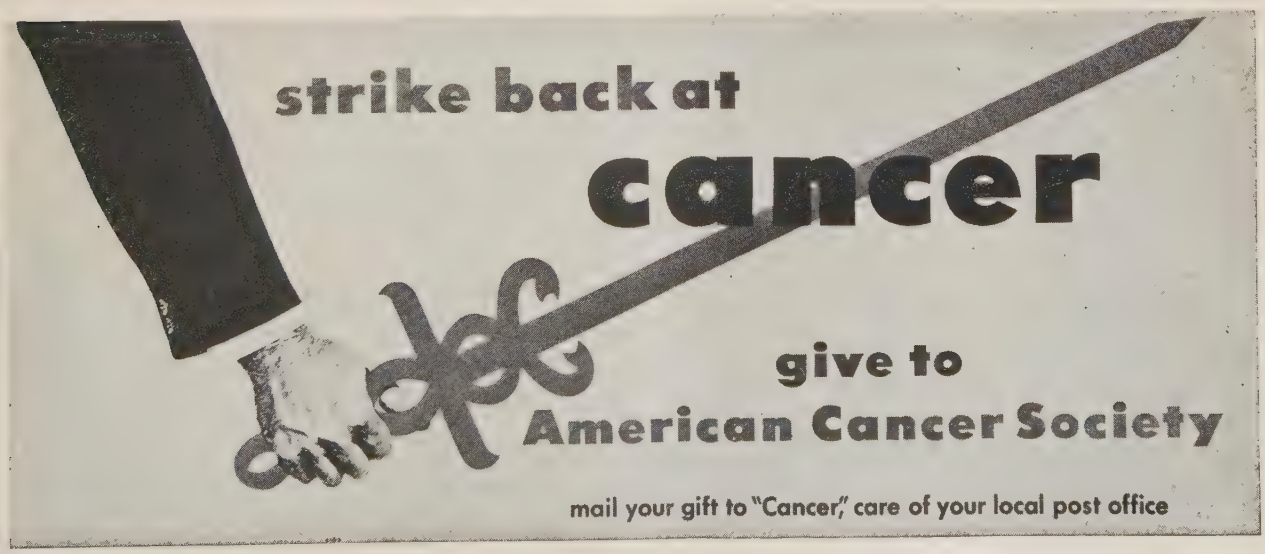

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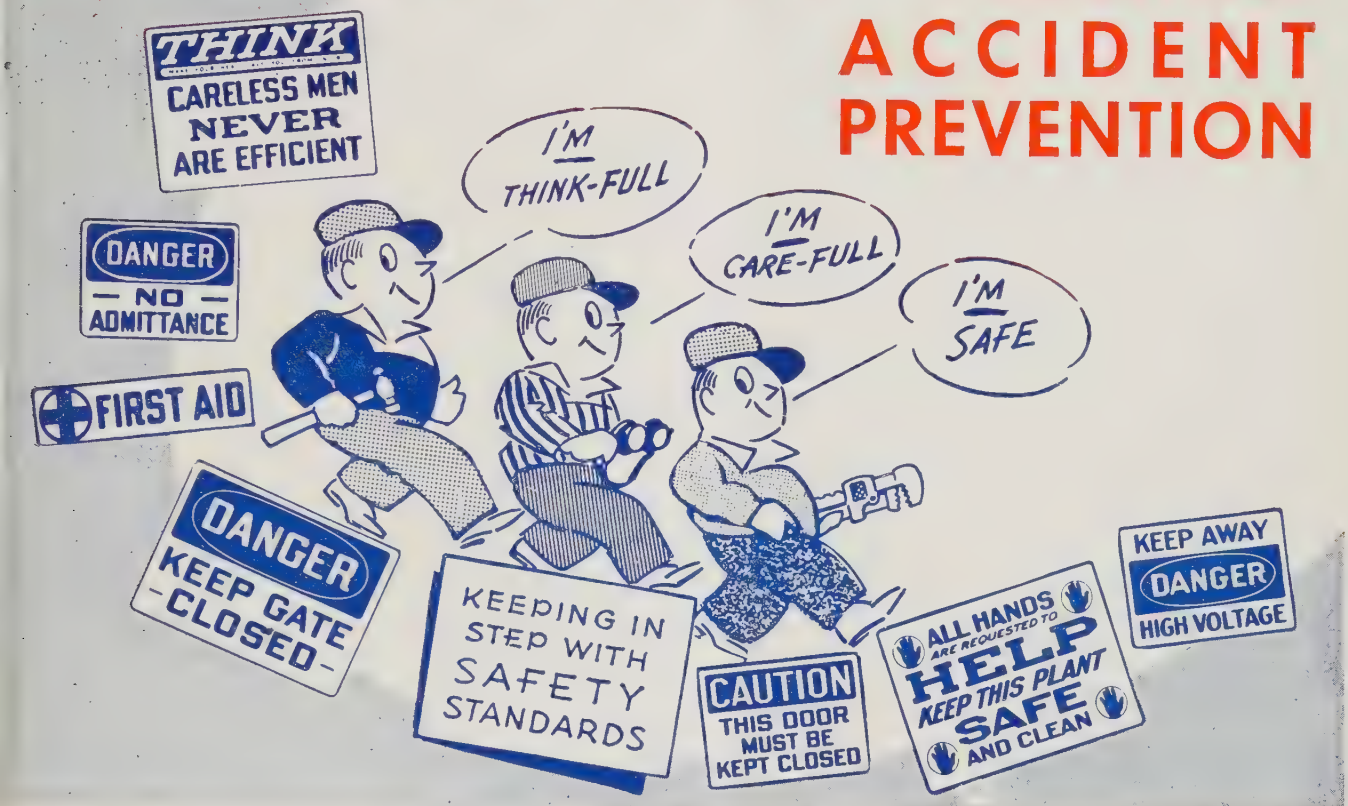

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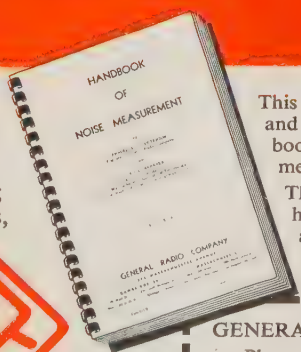

This 118-page manual, written by Drs. L. L. Beranek of M. I. T. and A. P. G. Peterson of General Radio, is a comprehensive handbook describing simply and fully the standard measuring equipment and techniques, and methods of interpreting the results.

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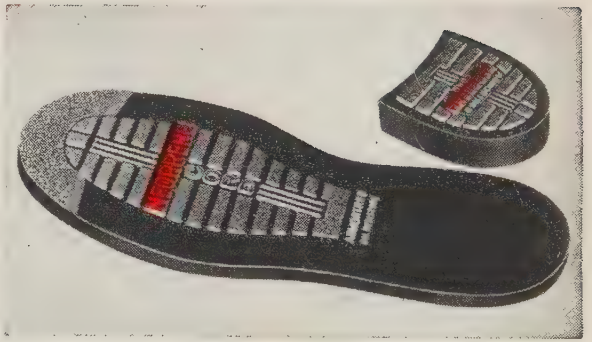

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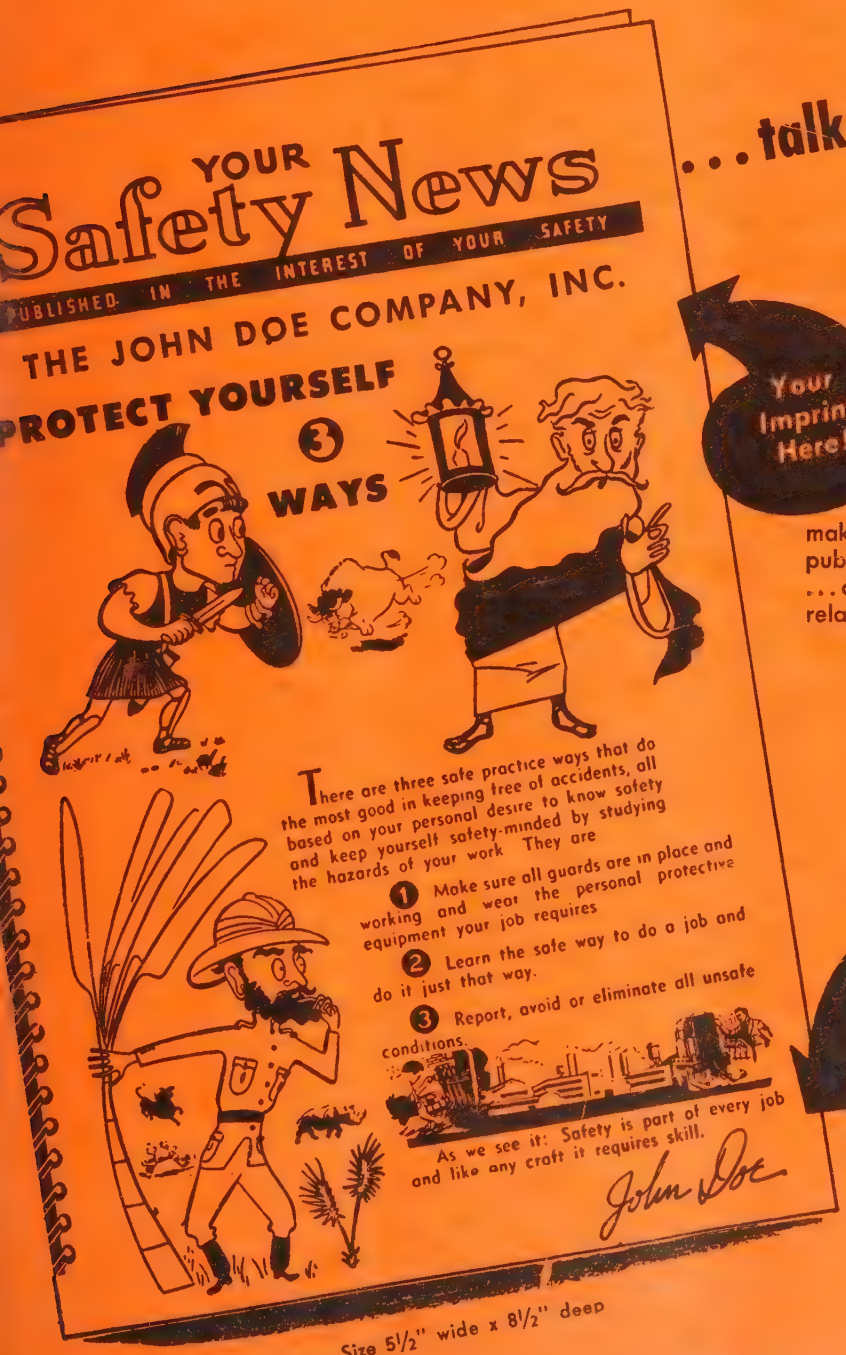
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THE JOHN DOE COMPANY, INC.
PROTECT YOURSELF
3
WAYS
There are three safe practice ways that do the most good in keeping free of accidents, all based on your personal desire to know safety and keep yourself safety-minded by studying the hazards of your work They are
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NOTE:
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YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
from the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES WORK OVERTIME
Dress for Safety
SAFETY SHOES
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SAFETY ENGINEER'S NIGHTMARE

SAFETY ENGINEERS from one end of the country to the other have had their nail-biting moments of frustration. Especially is this true when dealing with rugged individualists or others who disregard safety rules and practices devised for their own protection.

Imagine, if you will, how this form of frustration can be intensified when the working staff consists of inscrutable, placid orientals trained from infancy to develop a fatalistic attitude which decrees that "what is to be, will be." The very thought of trying to inculcate safety into such minds is enough to bring on the birth of king-size ulcers!

And yet Lt. Col. Arthur M. Cory describes just such experiences as Ordnance Corps advisor in Korea elsewhere in this issue. Col. Cory points out that we in this country have taken for granted our national emphasis on safety, just as we have accepted so many other good things that we describe as the American way of life. To appreciate properly the results in life conservation built up in the United States, we need spend only a comparatively short time in another country. We soon would have a perfect answer to those dyspeptic pessimists who have decried the superb accomplishments of the safety movement within our own country.

Books, plays, motion pictures and now television have acquainted us with the oriental unconcern with death, sudden, accidental or otherwise. For generations, we have been told that masses of humanity in the far east are comfortably resigned to what they consider their fate, regardless of what form that may take. It is perfectly true that many orientals educated in the west have become imbued with our generally accepted philosophy that the best thing in life is life itself and that we of the western world are constantly and tirelessly devoting our energies to preserving that life. Witness the Geneva top-level conference just brought to a close. The whole idea behind that meeting of world leaders stemmed from our desire to avoid the horrors of another war.

But to too many living in the far east, the loss of an eye, hand or leg or death by accident may be a sad occurrence but is to be accepted as a manifestation of one's fate. Imagine the hours of almost heart-breaking discouragement in trying to revise the thought processes of a whole people. Ulcers? It is a wonder to us that Col. Cory and others who accomplished so much did not return from Korea in a state of complete nervous prostration. Talk about the patience of the oriental! What greater example of patience can be imagined than that displayed by men trying to show a fatalistic people that accidents can and must be prevented?

If the average safety director of an American plant thinks he has a tough job in spreading the gospel of safety, let him read Col. Cory's report in this issue and take comfort in the knowledge that he dosn't know to what lengths safety troubles can really go!—H.A.

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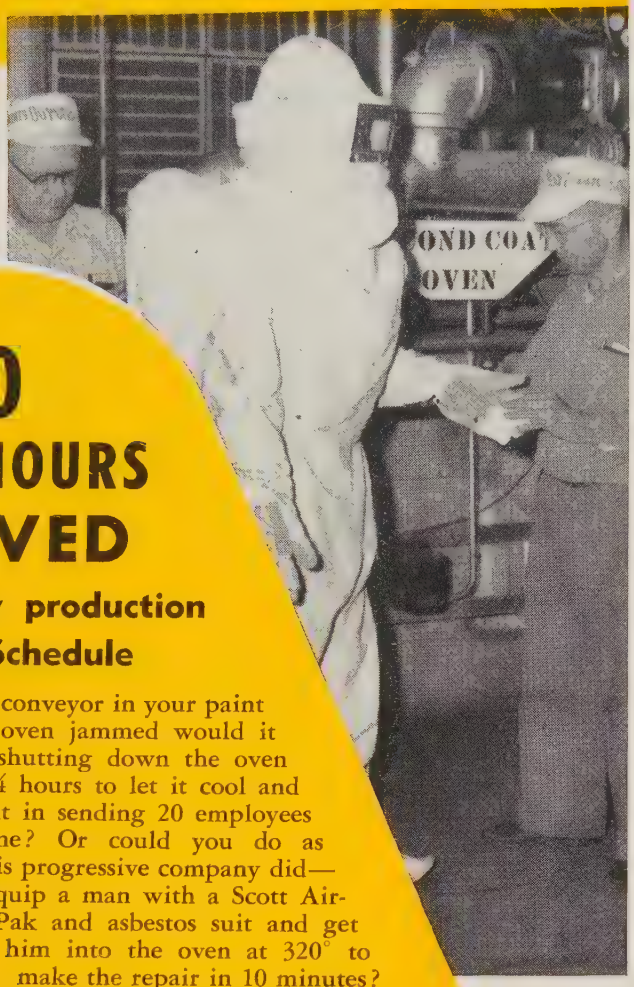

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Portland, Ore. *September 12–13*

The Second Annual Pacific Northwest Industrial Health Conference (Multnomah Hotel). R. Walter Ager, attendance chairman, Pacific Northwest Industrial Health Conference, 824 S. W. 5th Ave., Portland, Ore.

Cleveland, Ohio *Sept. 13–15*

Seventeenth Annual Ohio State Safety Conference and Exhibit (Hotel Carter). Michael L. Stefani, General Manager, Cleveland Safety Council, 2073 E. 9th St., Cleveland 15, Ohio.

York Harbor, Me. *September 15–16*

Twenty-eighth Annual Maine State Safety Conference (Marshall House). Arthur F. Minchin, Secretary, Department of Labor & Industry, State House, Augusta, Me.

Chicago, Ill. *Oct. 17–21*

Forty-third National Safety Congress and Exposition (Conrad Hilton and other hotels). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Charleston, S. C. *November 3–4*

Eighteenth Annual South Carolina Accident Prevention Conference (Francis Marion Hotel). J. Donald Watson, Jr., Secretary-Treasurer, P. O. Box 539, Columbia, S. C.

Kansas City, Mo. *November 14–18*

Eighty-third Annual Meeting of the American Public Health Association and related organizations (Municipal Auditorium). Dr. Reginald M. Atwater, executive secretary, American Public Health Association, Inc., 1790 Broadway, New York 19, N. Y.

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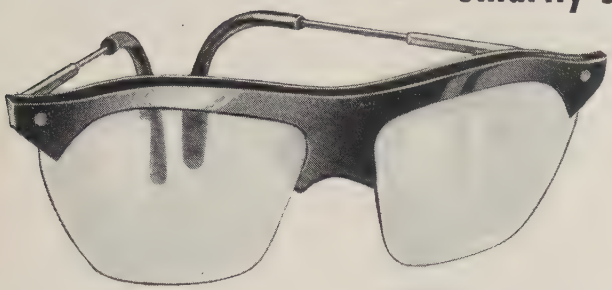

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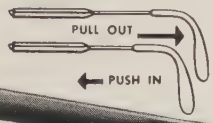

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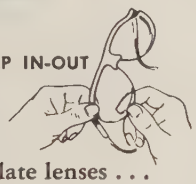

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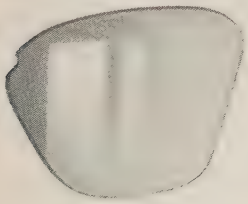

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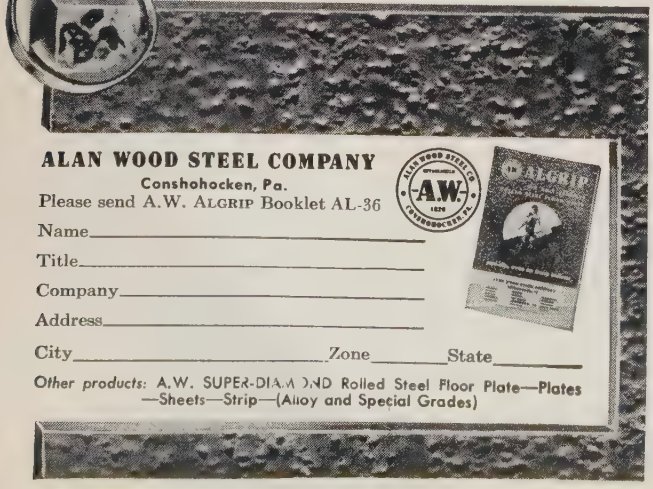

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Check List of Production Aids:

Through Safety—

Feed Roll Guard 20
Vibration Isolating Material 24
Foot Protection Program 32
Noise Protection Devices 35
Safety Publications 47
Non-Skid Floor 50
Life Preserver Jacket 50
Highway Flare 63
Finger Film Badge 69
Plastic Bottle Carriers 69
Portable Safety Barricade 69
Explosion Vent Plastic Window 69
Lineman's Belt 70
Shaper-Jointer Fence 70
Ladder Leveler 73
Safety Promotion Kit 74
Safety Prescription Glasses 74
Non-Skid Floor Finish 75
Sound Level Meter 75
Safety Slogan Cups 75

Through Maintenance—

Lighting Equipment 16
Marble Cleaning Products 21
Vibration Isolation Materials 24
Maintenance Publications 47
Non-Skid Floor 50
Explosion Vent Plastic Window 69
Portable Safety Barricade 69
Noiseless Vacuum 73
Ladder Leveler 73
Wooden Mallets 74
Concrete Finish 74
Wire Rope Clamp 74
All-Purpose Absorbent 75
Non-Skid Plastic Finish 75

Through Industrial Hygiene—

Vibration Isolation Materials 24
Foot Protection Program 32
Air Pollution Counter 34
Noise Protection Devices 35
Air-borne Dust Sampler 38
Paint Spray Filters 38
Exhaust Fans 38
Gas Detector 39
Fog Filter 39
Electronic Air Cleaners 40
Emergency Damper Opener 40
Air Cleaning Filter 40
Gas and Vapor Sampler 40
Air Line Hand Vacuum 41
Heavy Duty Dust Cleaner 41
Fume Control System 42
Portable Dust Impinger 42
Hazardous Location Vacuums 42
Multiple Blower 42
Self-Contained Dust Unit 43
Tube-Axial Fans 43
Wet-Foam Dust Collector 43
Hand Cleaner 69
Radiation and Burn Treatment 73
Neoprene Shoe Sole 74
Sound Level Meter 75
Safety Slogan Cups 75
Silicone Skin Cream 75

Through Fire Protection—

Fire Protection Publications 47
Water-Spray Technique 56
Explosion Vent Plastic Window 69
Burglar Control System 70
Dry Chemical Extinguisher 70
Fire-Resistant Hydraulic Fluids 70
In-Plant Fire Truck 73
Aluminized Fire Suit 73
Fire-Fighting Trailer 74

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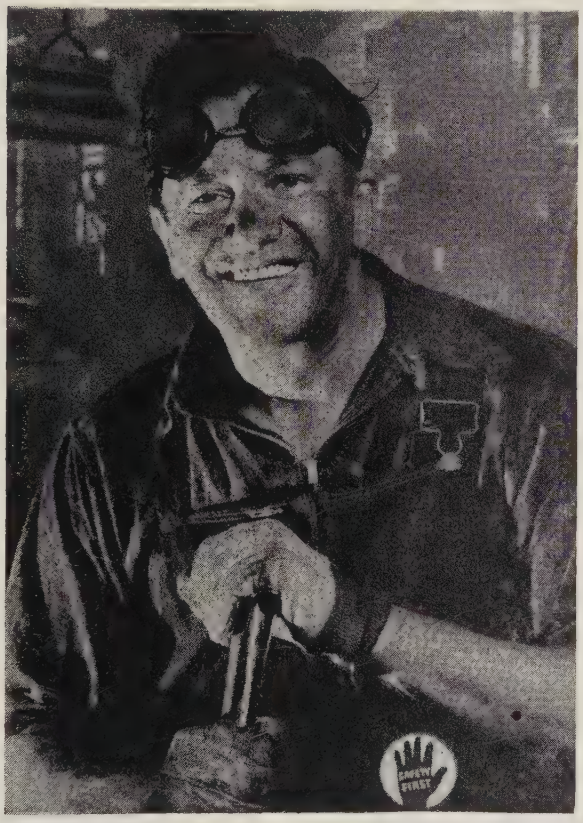
FOR INDUSTRIAL ACCIDENT PREVENTION


DANGER
HIGH VOLTAGE
NOTICE
THIS GATE MUST BE CLOSED BEFORE THE ELEVATOR CAN BE OPERATED
ALL HANDS ARE REQUESTED TO HELP KEEP THIS PLANT SAFE AND CLEAN
A FIRE MIGHT PUT EVERY ONE OUT OF WORK
HELP THE MANAGEMENT PROTECT YOUR JOB
NO SMOKING
FIRE EXIT
CAUTION
— DON'T —
CLEAN - OIL - REPAIR MACHINERY WHILE IN MOTION
THINK
THE BEST SAFETY DEVICE IS A CAREFUL WORKER
GET THE SAFETY HABIT
DANGER
WEAR GOGGLES WHEN CHIPPING OR GRINDING
SAFETY FIRST
POSITIVELY NO SMOKING
NOTICE
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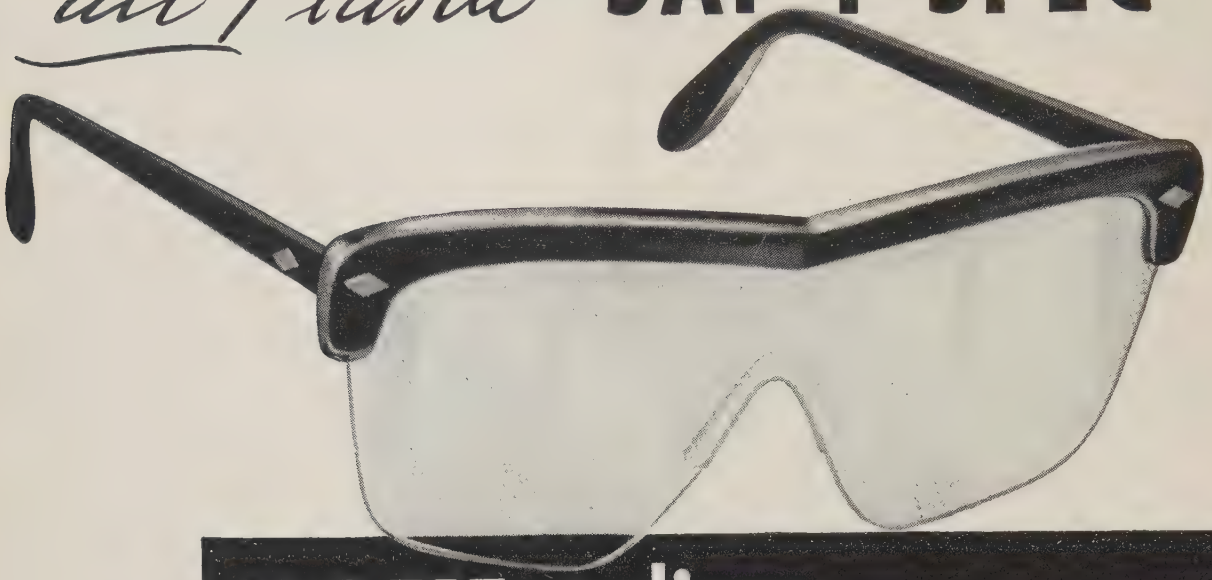

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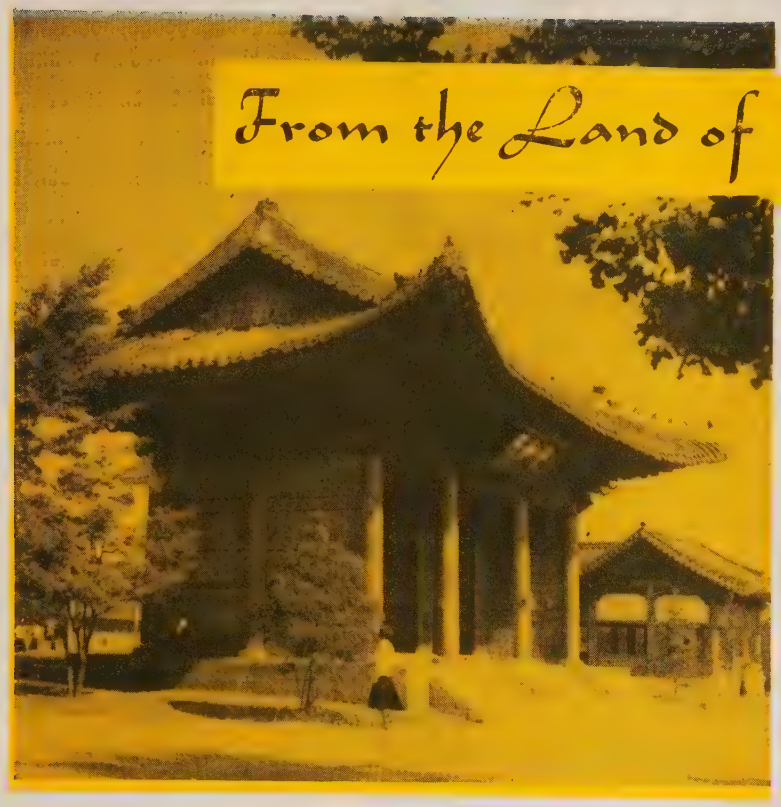


From the Land of "SAFETY LAST" ... A REPORT TO Safety Engineers

by **ARTHUR M. CORY**
Lt. Col., Ord. C,
USAR

FIRST OF ALL, I might as well admit that until recently I had never seen much excuse for safety experts. Back in the early days of World War II, those of us assigned to the staff of an Ordnance motor maintenance school felt that we were being harassed above and beyond the call of duty by the safety engineers who were constantly dogging our tracks. We believed that we were taking more than normal precautions, and that the safety experts peering over our shoulders were only trying to justify their existence.

Went Along With Them . . .

For the most part, we went along with them. It was the path of least resistance, we reasoned; they meant well, they weren't doing any real harm, and if we kept them happy they kept out of our hair. There were some things we wondered about, of course. One day an inspecting colonel came in while we were sweeping up. Taking a quick glance at the floor he barked at us, "Too much dust. Put more oil in the floor compound."

So we put more oil in the floor compound. The next day our civilian safety expert came in while we were sweeping. He took one look at the oily mixture and yelled, "Floor too slick; someone will fall. Don't use so much oil." In disgust we quit using floor compound entirely, swabbing the floors with water instead. This left a powdery residue on the floor and rusted our tool stands, but at least no one objected to it.

But Took the Credit

We had only a few accidents—all minor—despite the hundreds of students who went through the school. I'm afraid that in those days we took most of the credit for our safety record, and that we were inclined to discount the work of the safety engineers who watched over us. In fact—and I'm speaking as an individual now—it wasn't until I had spent several months as an Ordnance Corps advisor in a Korean motor school that I really understood the need for an intensive program of safety education. As we have done with so many other things in this country of ours, we have taken the universal stress on safety for granted; we haven't recognized its real significance. We need to live for a while in another country in order to appreciate the importance of the work sponsored by safety organizations in America.

For the American emphasis on safety is a tribute to the value we place on human life. In some parts of the world today life is very cheap, however—so cheap that safety practices, if not actually unknown, are at least considered a waste of time and effort. That seemed to be the general feeling in Korea. The 5 sergeants who worked with me there—good American GI's, to whom the habit of safety was as natural as the habit of breathing—shared my incredulity and dismay at the lack of safety consciousness we saw all around us.

"Safety First" Unknown

The expression "Safety First" seems to be unknown to most Koreans; safety is the *last* thing to be considered. One of the reasons for this attitude stems from the oriental unconcern about death; people of the Far East are inclined to be comfortably resigned to Fate. Their pragmatic fatalism makes them oblivious to the loss of an eye or an arm, a leg or a life. If they are to be hurt or killed, so be it; there is no need to take elaborate

precautions against something that can't be controlled.

This point of view, of course, is not exactly conducive to the avoidance of accidents. Like so many monkeys, workmen climb all over improbable scaffoldings of skinny bamboo poles loosely tied together with woven rice-straw rope. Or they load their "A-frames," which they carry on their backs, with incredible loads; I once saw a small Korean staggering down a street in Pusan carrying an engine which weighed considerably more than he did. School boys dash through traffic to climb on the tailgates of lumbering trucks; when they want to get off, they simply jump, usually rolling end over end when they hit the ground. The old and young alike hitch rides on asthmatic buses by

Maintenance the Korean way . . . squatting on mats outdoors. When they work on something they don't know when to stop. This jeep probably had a flat tire to start with.

perching on rear bumpers or by clinging to spare tires. Everywhere there is a complete disregard of even the most basic concepts of safety, and the accident rate is astronomically high.

Superstition Causes Accidents

Another reason for the high accident rate is superstition. Many Koreans are dominated by a fear of evil spirits. Parenthetically, this fear of evil spirits has also been responsible for one of the most attractive things in the orient—the lovely sweeping curves of the roofs. The spirits that plague men reside on the ridge line of a house; from this point they slide down the roof to land on the shoulders of anyone who steps out. Fortunately, however, these spirits can travel only in a straight line, so for hundreds of years Korean houses have had curved roof lines to deflect evil spirits from the shoulders of their victims.

Shadow or Real Death

Still another belief is that evil spirits lurk in a man's shadow. To get rid of these spirits, Koreans of all ages have an unnerving habit of darting across the street in front of a jeep or a truck. If their timing is good, the truck runs over the shadow and destroys the evil spirit. If the timing is bad, the Korean suddenly joins his honorable ancestors.

3 More Accident Producers

Three other things combine to make Korea a safety engineer's nightmare. One is the Korean's lack of familiarity with motor vehicles and power tools. Another is his lack of imagination—his inability to visualize what might happen in a given situation. Still another is his reluctance to admit that he doesn't understand directions or instructions. Most of us have something of this feeling, of course, but the oriental has a king-sized objection to such an admission; it causes him to look foolish, or to lose face.

In all fairness, we should realize that the Korean is not to be blamed for his lack of mechanical background. His is a country of two-wheeled ox carts, of A-frames strapped on the back. Water is carried in crude buckets suspended from a yoke that rests on the shoulders; food is cooked over charcoal pots. A short stick, a flat stone, and the nearest puddle of water constitute a washing machine. To build the terraces that crawl up the sides of mountains, 3-man shovels are used: one man guides the handle, while 2 other men pull the shovel forward with ropes. To raise water from one rice paddy to a higher one, men climb endlessly up a vertical wheel; dippers mounted on the wheel scoop up water, carry it upward, and pour it out. Decrepit cars and trucks are seen in cities, but not in rural areas.

It is not surprising, then, that the average Korean youth is not mechanically inclined, or that his behavior is highly unpredictable when he climbs into the cab of a powerful truck. He learns by joyous but appalling experimentation, with no thought of safety either for himself or for others. He has all the faults of the beginning driver: he moves from a parked position into the line of traffic without looking back, he fails to use hand signals, he blares across intersections, he overdrives his brakes, he overblows his horn. I once tailed a loaded dump truck for several miles at 55 miles an hour before I could pass the truck and flag it down. Most of that time we were in a 30-mile zone, although we tore through one small village zoned at 15 and swarming with tiny children, aged papa-sans, school girls, dogs, and American soldiers. Another time, caught in a traffic jam, I brought my jeep to a slow stop—only to be hit from the rear a half minute later by a Korean driver who hadn't heard about momentum.

What's the Fuss?

Nor is their carelessness confined to driving. Regardless of how closely we watched them, the students in the Korean motor school were constantly coming up with new ways to maim, lame, or exterminate themselves. The first time I inspected the motor pool I found several Korean soldiers casually crawling around under a 2½-ton truck. Both front wheels had been removed; the entire front end was supported on 2 flimsy screw jacks borrowed from nearby jeeps. The base of each jack was about 5 inches square, and the rear wheels of the truck were not chocked. A sudden gust of wind, or someone leaning against the truck, would have pushed it off the jacks. The Koreans couldn't understand why I made such a fuss about it.

They couldn't understand, either, why I wanted them to wear goggles when they were welding, but eventually they agreed to do it. The next time I checked the arc welding class, the men were wearing goggles —but they were clear, not dark. The instructor explained, through my interpreter, that the students couldn't "see through the dark glasses!" Then there was the day I saw black, oily smoke rolling out of the welding shop. I dashed in with a fire extinguisher, only to find the latest development in the technique of lighting a welding torch: with dozens of spark lighters in the tool crib, the students had set fire to a piece of oil-soaked rope. It smouldered on the floor; when they wanted a light they blew on it and lighted the torch from the glow.

Wires—but No Plug

Another day I came upon a student using an electric grinder which cut off and on intermittently as he worked. I traced the grinder wire off the bench, under the edge of the tent, and over to the pole where it was connected, only to find there was no plug; the loose ends of the wire had been twisted together and pushed into the outlet. When I asked why they had taken it off, they shrugged their shoulders. I waited until the plug had been replaced. A week later it was gone again; no one knew why.

Courteous—Not Safe

Our Korean friends listened impassively while we talked to them about the prevention of accidents. So long as we were in their vicinity, they did their best to do as we had suggested. This was not because they were sold on the virtues of safety, but because in their courteous way they wanted to please us, however zany our ideas seemed to them. They didn't really understand—or at least didn't believe—our warnings about a potentially dangerous situation until after the accident had happened. Once there had been an accident, however, they were convinced; they saw there was a reason for what we had been saying and, as the army would phrase it, "they took steps to correct the situation." Sometimes they even seemed to feel that an accident was a fortunate thing, to be turned to their advantage—as they did in the case of the wrecker truck.

Warning Goes Unheeded

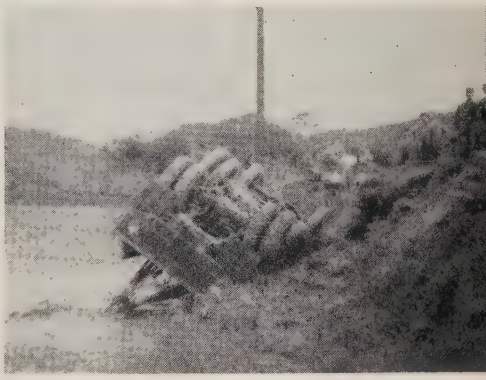
In June, near the end of the rainy season, a demonstration of the 4-ton wrecker truck had been scheduled for one of the classes. Although we had repeatedly told the instructor to send the students to the demonstration area in a separate truck, he allowed them to perch all over the rigging of the wrecker. While crossing over a narrow dike between two rice paddies, the driver attempted to pass an ox-drawn cart. The rain-soaked shoulders of the dike were soft, and the big truck began to slide. Moving slowly and deliberately, the wrecker slid sidewise and crablike to the bottom of the 20-foot slope. There, still in ghastly slow motion, it turned over on its back and lay still. Of the 35 Korean students on the truck, 31 were able to jump off. The others, tangled in the cables of the wrecker, were drowned in the mud and water of the rice paddy.

When I talked with the commandant of the school I expressed my regret for the tragedy as best I could. Then I reminded him that for a long time we had been saying that it was dangerous for students to ride on the wrecker.

"Yes," he agreed, "is terrible thing, I think." Then he smiled cheerfully. "But is good for instruction. I think now we not do that any more."

But Not Any More

And there you have it. There was a time when I made snide remarks about safety experts and all their works, but not any more. I'm convinced. I've lived in a country where safety precautions were unheard of, and I've seen the terrible things that happen when safety is disregarded. From now on, my hat is off to the safety engineer; he's my boy, and if he tells me to wear goggles when I turn the crank on a pencil sharpener I'll do it without argument.



This wrecker truck, loaded with Korean soldiers who had been warned not to ride it, tipped over into rice paddy, killing three. Korean comment: "Maybe not do that anymore."

Accident Statistics

THE BUREAU of Labor Standards has just released 4 publications in a series, designed to improve injury reporting systems throughout the country, and to provide fullest use of the data compiled. The series was prepared by authorities in the field of injury statistics and have been made available at the request of the Committee on Accident Records, Analysis and Use of the President's Conference on Occupational Safety.

These will be helpful to plant owners, both large and small, state administrators, safety engineers, and others interested in improving the collection of comparable injury statistics in the United States.

Subject titles of the first four in the series are: 1. Accident Causes and Cause Coding (15 cents); 2. Estimating Costs of Industrial Accidents (10 cents); 3. Investigation of Accidents for Cause and Remedy (5 cents); and 4. Work Injury Rates (10 cents). A small supply of these bulletins is available for free distribution. Copies may also be purchased, at the price quoted, from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

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Panel Members:	**JOSEPH HERBENAR,**	Lamp Specialist,	General Electric Co., Chicago.
	ERIC CHURCH,	Research Engineer,	Benjamin Electric Mfg. Co., Des Plaines.
	RALPH LUSK,	Lighting Engineer	Commonwealth Edison Co., Chicago.

Chairman Zersen: Some 39 percent of the population has defective eyesight at the age of 30; for those of 40 the figure is 48 percent; for age 50, 75 percent; and for age 60, 82 percent. Good lighting, however, results in less eyestrain for all ages, and helps to make up for visual defects.

One way to see fine print is to put a magnifying glass on it. You can accomplish the same result, however, by putting more light on it. Better lighting results in greater accuracy of workmanship, in fewer rejects and improved quality. It is a factor in better housekeeping, because it enables cleaners to see the dirt in the corners. It makes for better morale, less fatigue, and fewer accidents.

In addition, better lighting can actually increase production since people see more quickly with good light. This can be demonstrated with a rotating disk lighted alternately with bright and dim lights. In the bright light the disc appears to rotate more slowly because the eye itself has been speeded up. The same effect occurs on a camera; taking a picture on a dark day requires a longer exposure.

Good lighting depends on both the quality and quantity of light, whether or not there is glare, either direct or reflected. The quantity of light may be expressed in several different terms. A "foot-candle" is the intensity of light from a standard candle on a surface one foot away. A "foot-lambert" is the term used to express the product of foot-candles and reflection factor of the surface you are viewing; the "reflection factor" can be measured separately.

If you have 100 foot-candles strike the point of a tool, but only 50 percent of it is reflected back to your eye, then 50 percent is lost. For many of these measures, meters are available. For example, there is a meter to measure foot-candles, and another to measure the brightness, which is determined by the amount of light in foot-candles and the reflection factor. Still another type of meter will measure the visibility. In this case the standard is 10 point Bodoni type read at a distance of 14 inches under an illumination level of 10 foot-candles. The meter reading gives the number of foot-candles necessary to provide equally comfortable seeing for any given job.

Lighting equipment is divided into two main types—distributing and concentrating. The distributing type distributes the light more or less equally throughout the room; the concentrating type, used in high-bay units, concentrates the light on the work plane. In the latter case, the lighting units should be about as far apart as the luminaires are above the floor.

Trend to Quality Lighting

Shielding is also important to protect the eye from excessive glare. The trend here is to provide shielding for factory lighting comparable to that provided for office lighting. I think the day when the factory interior was the orphan child has passed. Some manufacturers are producing factory fixtures which direct as much as 25 percent to 40 percent of the light up to the ceiling. When you step into an area like that you know you have quality lighting.

Progress has also been made in the development of lamps with longer

Here are some general rules to keep a lighting system at top efficiency:

1. Make periodic checks with your light meter—it's pretty hard for the eye to determine just how much the illumination level has fallen off.
2. Establish a regular cleaning schedule.
3. Clean and repaint walls and ceilings.
4. Establish an economic plan for replacing fluorescent lights.
5. Keep a stock of spare parts.
6. Make periodic voltage checks.

life. Today fluorescent lamps are available that last 5 times longer than the first fluorescent tubes in 1939, are 80 percent more efficient and cost 60 percent less.

Attention has also been given to specialized lighting problems. For example, there is a device called an "examinolite" which shows color comparisons at different levels of illumination for inspection jobs. Polarized light is being used in some cases to detect the effects of stresses and strains in glass, clear plastic, and similar materials.

The most important factor in maintenance of lighting is keeping the fixtures clean. For example, if you have an investment of 20 thousand dollars in lighting equipment and the lighting level has decreased 50 percent because of the accumulation of dirt and dust, you have a practical waste of 10 thousand dollars of your investment capital. Not only that, but you're paying for current you're not getting any use from.

Mr. Herbenar: Costs of an industrial lighting system will, of course, largely be determined by the type of fixtures used and the cost of the power. For the average plant I estimate the cost of replacing lamps is around $1.40 per lamp, and the average cost of power somewhere around a cent or two per kilowatt hour. For every thousand dollars worth of lamps you buy, it's going to cost you at least a thousand dollars worth of maintenance, and perhaps 8 thousand dollars for power. The cost of depreciation of fixtures amounts to about another 2 thousand dollars. Thus, for every thousand dollars worth of lamps you buy, your lighting cost will be around 11 to 12 thousand dollars.

More than the Lamp Cost!

Statistics from a number of industrial plants indicate that the cost of replacing a 40-watt fluorescent lamp is $1.40—in other words more than the cost of the lamp itself!

Some people tell me that it doesn't cost anything to replace a lamp, because they have a man there anyway. I tell them that it doesn't cost a railroad anything to haul an extra passenger to New York, but they won't get very far arguing that he should ride free on that account.

There are, of course, some ways you can cut down the cost of spot replacement a little. For example, I know that one plant maintains a stock of lamps on the floor, which saves the man who makes the replacement a little time, though it probably increases storage cost somewhat. In some large companies, a man starts through the plant on Monday morning replacing the lamps that have burned out the previous week. With a relatively good system of spot replacement you can probably cut the labor cost to 90 cents.

Now there are two things we know about lamps: one, that they will burn out eventually; and, two, that the light output depreciates with burning time. The average life of a 40-watt fluorescent light is 75 hundred hours (10 thousand if it is burned 12 hours per start), and about the end of its life it is down to 75 percent of its original light output. At 5 thousand hours the output would be about 84 percent.

Suppose you had 100 lamps and changed no tubes for 75 hundred hours. Just before the burn-out, those 100 lamps would be providing the light output of only 75 new lamps. In addition to that, under average conditions, 50 percent of those lamps would have burned out before 75 hundred hours, and the actual light output would be even less. At 5 thousand hours only 10 percent will have burned out. Group replacement before the 75 hundred hours are up will cut the cost of replacement.

(Continued on the next page)

If lamps are replaced when they burn out, the labor cost for 100 lamps is 90 dollars for 75 hundred hours, and the cost of the lamps 88 dollars. Thus, for any given 75 hundred hour interval the cost is 178 dollars. On the other hand, tests have shown that only about 10 percent as much labor is needed for group replacement. If the group replacement were made at 5 thousand hours, somewhat more than 100 lamps would be needed per 75 hundred hour interval—about 10-sevenths as many to be more exact—thus the cost of the lamps would run to $125.71. With labor costs at 9 cents per lamp instead of 90 cents, however, the total labor cost would be only $12.86 and the total cost of the replacement $138.37. If group replacement were to be undertaken at a shorter interval—say after 6 thousand hours when only 20 percent of the lamps would have burned out, the cost would be $143.75.

As I look at it, however, the biggest advantage of group replacement is that it gives you a chance to clean your fixtures at the same time, and put the operation on a mass production basis: one man removes the lamps; the next one cleans the fixture; the third one replaces it. The cleaning also increases the amount of light you get out of your installation.

If you were to put in a new installation and you started at 50 foot-candles and did nothing but replace the lamps as they burned out, within 5 years you'd be down to about 25 foot-candles. I've made some actual measurements in a store, (the loss would probably be greater in a plant because of more dirt) and after 5 and a half years the lighting was down to 60 foot-candles. Simply by washing the fixtures and replacing all the lamps at once, we raised the level to 140 foot-candles. Since a fluorescent lamp suffers its greatest light loss in the first 100 hours of burning, that was not considered a fair test—so measurement was made somewhat later. The level was 123 foot-candles, or double the previous intensity.

Questioner: Do the lamps that last beyond 75 hundred hours burn out faster or slower than the ones that burned out before that time?

Mr. Herbenar: The burn-outs are rather fast until about 90 percent of the lamps are gone. The 10 percent that are left linger on quite a while.

Questioner: What is the immediate burn-out?

Mr. Herbenar: That shouldn't be any larger than one-half of 1 percent of the group. Some companies save some of the lamps which are not burned out at group replacement time—perhaps 20 percent will be in fairly good condition—and use them for replacements in the intervals between the general replacements. In other cases, lamps are never re-used after group replacement; extra lamps are purchased to make replacements in the intervals.

Questioner: Where do the starters fit into the group replacement program?

Mr. Herbenar: We have never particularly recommended group replacement of starters. Actually there are several different types of starters and they act in different ways when a lamp burns out. The most common is the glow-switch—when the lamp burns out it keeps on trying to start it until it burns itself out or the cathode in the lamp gives way. The thermal reset starter will try to start the lamp 10 times or perhaps 15, then it will kick out of the circuit. The manual reset starter will automatically go out of the circut after a half a minute or so, and must be manually reset.

Mr. Church: One comparatively new development in fixtures is lessening the cleaning problem—that is slots in the top of the unit which permit convection currents from the heat of the lamp to carry off dust and dirt. These are available for both incandescent and fluorescent lamps.

However, there are two precautions to be observed with this type of fixture: first, if the slots are in the wrong place dirt will accumulate in spots and the cleaning problem, though not so great as in the case of unslotted fixtures, will still exist; second, if the fixtures are used near the ceiling in a high-bay area, a minute drop of moisture from the ceiling will blow the lamp.

A type of unit for steel mills has a concentrated reflector inside a steel housing, and toughened glass on the bottom. This prevents breakage from flying steel chips.

Questioner: What types of explosion-proof lights are there?

Mr. Church: Basically, hazardous locations are divided into 3 general groups: those in which you have highly explosive vapors like gasoline and ether; those in which you have grain dust, chocolate dust, etc.; and areas for storage of flax, cotton, etc. Generally speaking, all the fixtures that are suitable for group 2 are suitable for group 3—the dust is kept out of the fixture. You can't, however, keep vapor out; and, there is no such thing in reality as a vapor-proof fixture. The intent is rather, to make the luminaire sufficiently strong so that the explosion will take place inside the fixture, and the flame will be snuffed out there before it spreads. There are both fluorescent and incandescent explosion-proof units on the market today, but the incandescents go up to only 500 watts. There are no mercury-vapor units.

Questioner: What type of unit is approved for a spray booth?

Mr. Church: Underwriters Laboratories have no type of unit approved for a spray booth. Some manufacturers put a sheet of glass over the top of a spray booth and lay a unit on top of that. Others make a frame which they hang onto a fixture and permit that frame to open up in the booth itself. There is no generally accepted method of lighting a spray booth, however, I suggest you consult your insurance company and your local fire inspector.

Questioner: Could the reflector-type lights in class 2 be used for a boiler room? Some of the ventilators blow in the rain, and the light blows out.

Mr. Church: Yes, I think your best bet would be to buy a reflector to cover the lamp.

Questioner: We have an area where we must use an explosion-proof fixture. There's a lot of gasoline around, and the fixtures operate in a room where there is a water spray. We have had a lot of trouble with water collecting on the fixtures.

Mr. Church: There is one solution, but it may not be feasible for you: that is, put your fixtures outside the wall and shine them in through the windows with spots.

Mr. Lusk: To illustrate how lighting standards should be applied, let me describe the best lighting for a small machine shop, 96 feet, 6 inches by 76 feet, 7 inches, with a ceiling height varying from 10 feet, 6 inches to 16 feet. Ceiling and walls are grayish white with a reflection factor of 40 percent.

The Handbook of the Society of Illuminating Engineers recommends 50 foot-candles for medium bench and machine work—ordinary automatic machines, rough grinding, medium polishing, and 100 foot-candles for fine machine work. In this case 50 foot-candles is considered adequate.

The coefficient of utilization for a 2-lamp fluorescent closed top R.L.M. reflector mounted 9 feet, 6 inches above the floor is .70 and a medium maintenance factor is 55 percent. One hundred and one units with two 75 watt, 96 inch T-12 white, 48 hundred lumen fluorescent tubes are required. Lumen is the measuring term for the quantity of light given off by any source.

To get better quality, which is just as essential in a plant as in an office, we can use the type of fluorescent industrial fixture that lets 25 percent of the light go up, and has a 35 degree longitudinal shield to reduce direct glare. Although the coefficient of utilization is reduced to .57 for this area, the maintenance factor is increased to .65. Flue action results in dirt being deposited mostly at the edges of the top opening. Hence only 4 additional units are required to obtain a much improved lighting system for this machine shop.

From a panel discussion during the 5th national Plant Maintenance and Engineering Show.

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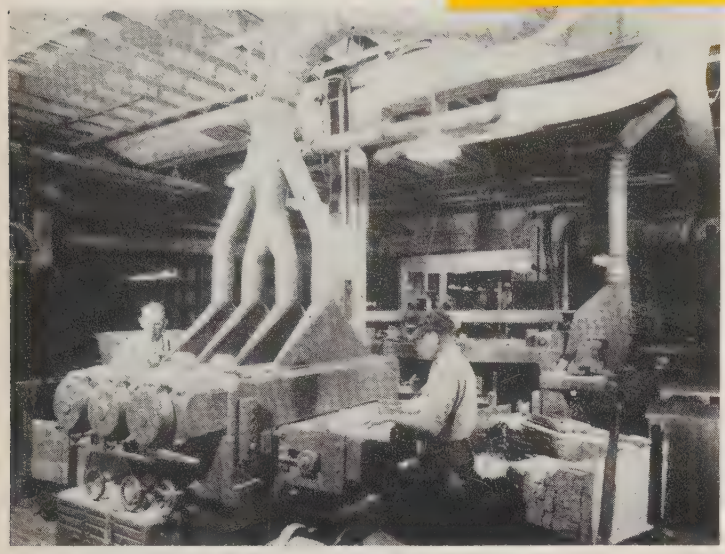
C-15

Feed Rolls and Lost Fingers in the Woodworking Industry



THE WOODWORKING industry's accident rate from fingers getting into feed rolls is not as great as that in which fingers actually come into contact with revolving cutters. However, in those instances where fingers do get into feed rolls the results are far more serious. Alert management in plants using machines where there is even a slight feed-roll hazard should make instruction in this operation a continually-recurring part of the safety program.

In many cases, feed rolls may be guarded enough to greatly minimize the danger; in various other cases this is difficult to do. Serious accidents have occurred at roll-type glue spreaders when the operator's fingers were drawn in between the rolls. However, glue spreaders are among many machines which can greatly reduce their accident potential through safety devices or special machine design.

In various cases and places, glue spreaders are equipped with a safety device which has 2 horizontal bars across the top of the machine, one at the infeed side and the other at the outfeed. Either the feeder or the off-bearer can easily reach one bar, both with his hands and the top part of his body. When either bar is pressed gently, feed of the machine is automatically stopped. Pressing harder against the bar reverses the machine rolls. It is claimed that a man with both hands caught in the rolls can release himself by thrusting the top portion of his body against the bar. As a result, the seriousness of the hazard is greatly reduced.

A new way of reducing feeding danger on feed rolls, is the substitution and use of an endless-bed machine instead of a roll-feed unit.* An outstanding example is the use of a modern endless-bed drum sander instead of a roll-feed unit. Even where short stock is being fed on an endless-bed machine, there is no necessity for getting the fingers anywhere near a feeding roll. The bed itself carries short pieces into engagement. Some of the more modern endless-bed sanders have proved particularly safe in this respect. Moreover, along with additional safety, greater production in feeding short-length parts is usually possible.

* The name and address of the manufacturer of this device may be obtained on inquiry to the Editor.

Injury Rate Dropping

THE INJURY-FREQUENCY rate for the first quarter of 1955 dropped 4 percent below the rate set during the corresponding period of 1954, establishing a new low for any first quarter on record, the U. S. Department of Labor's Bureau of Labor Statistics has announced.

Following a typical seasonal pattern, the injury rate rose from 10.0 in December 1954—the all-time low for any month—to 10.8 in January 1955. The rise continued in February, to 11.2 where it held through March. Each monthly rate, however, was lower than the rate for the same month in any previous year on record.

Although these early reports indicate a possibility that the injury record for 1955 might be lower than the all-time record set in 1954, there is strong evidence that the trend to lower injury-frequency levels, which started in the last half of 1953, may be easing off.

The majority of the individual industries showed only minor changes in injury-frequency rates between the fourth quarter of 1954 and the first of 1955. The largest increase was in the cold-finished steel industry, where the average injury-frequency rate increased from 6.3 to 15.6 in the first of 1955. Other sharp increases included: elevators, escalators, and conveyors, from 10.6 to 17.3; vegetable and animal oils, from 15.6 to 22.1; iron and steel forgings, from 17.2 to 23.1; miscellaneous chemicals and allied products, from 11.2 to 16.6; sausages and other prepared meats, from 16.6 to 21.8.

The greatest improvement in safety was recorded by the logging industry. This hazardous industry has reduced its injury rate from 74.7 injuries per million man-hours in the first quarter of 1954 to 69.2 in the fourth quarter and further, to 62.2 in the first quarter of 1955. The average for sawmills and planing mills decreased from 44.6 in the fourth quarter of 1954 to 37.3 in the first quarter of 1955; that for grain-mill products, from 21.6 to 16.4.

How to Clean MARBLE

THE USE TO which marble is put and the kind of care it is given largely determines the method by which it must be cleaned. For example, the difference in use between a marble foyer floor which is walked on all day by hundreds of people and a marble wall in a seldom-used vault call for different cleaning schedules and methods.

Exterior building marble will remain in the best condition if washed down frequently with a good pressure hose. This is true for any finish, carving, lettering, etc. Dirt adhesion is progressive if allowed to continue; buildup of dirt starts with one bit of dirt clinging to an earlier piece of dirt which has not been washed off. Do not use acid cleaners; use mild alkaline abrasion cleaners.

Smoke, grime and soot of cities when allowed to accumulate can best be removed by sandblasting, though steam cleaning or hand scrubbing will help. A building should always be hosed after cleaning to remove traces of cleaner and dirty water.

Steam Cleaning

Steam cleaning can be an effective method of removing dirt from marble, if done properly. Do not permit the use of acidic preparations often used with steam-cleaning equipment. Paint the stone with slurry of alkaline cleaner and allow to remain a quarter hour or so before directing steam on the area. Always rinse with clear water afterwards to remove traces of the cleaner or loosened dirt.

It is recommended that management supervise sandblast cleaning to make sure that the pressure is kept down to not more than 60 pounds, that the nozzle of the equipment's hose is kept at least 15 inches from the stone; and that iron-free sea sand or fine abrasive is used. Job contracting sometimes means that operators will step up the pressure, use coarse material and will hold the nozzle tight to the stone to gain time and money, with unfortunate results for the marble.

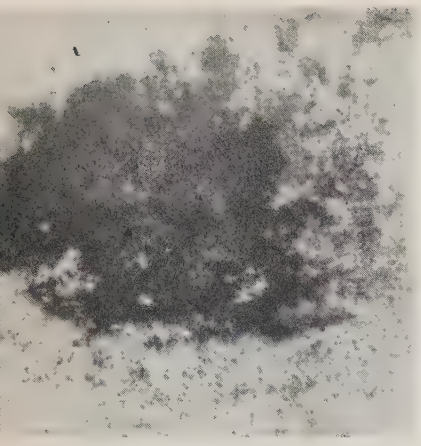
Stones containing lettering or receiving run-offs from above should be scrubbed frequently to remove traces of run-off dirt or rust from signs. Hosing helps to keep upper flat places free of dirt and eliminate such run-offs.

Metal fixtures should be inspected frequently and protectively painted to prevent rust. Bronze and brass should be coated with wax or colorless lacquers to prevent oxidation. The back surface of objects being attached to the marble wall should be painted to prevent oxidation also, before being put up. Water-tight joints between metal and marble should be maintained to prevent dirt from collecting and causing run-off streaks.

Another marble disfigurement that should be watched for is efflores-

To prolong action of stain-remover, men plaster poultice of it on marble walls.

Poultice on interior walls dries in 24 hours, is removed, and may be reapplied.



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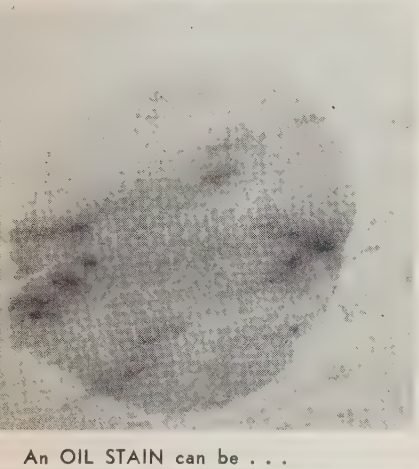

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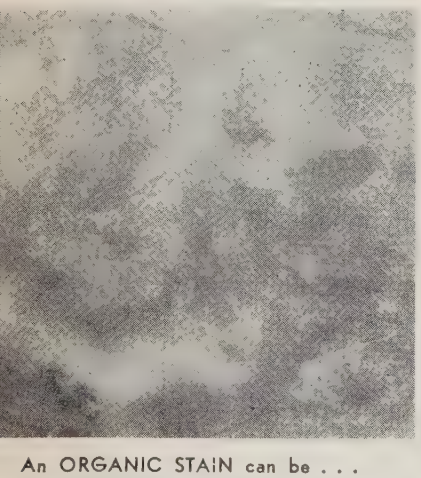

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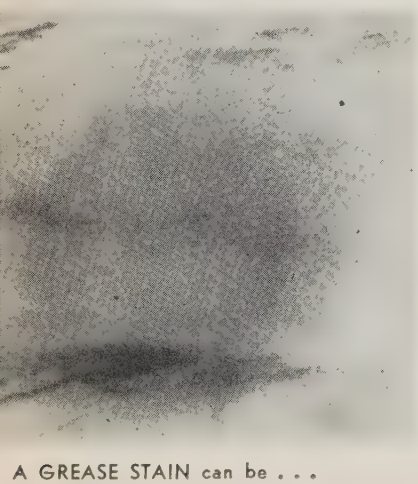


A GREASE STAIN can be . . .

cence: a deposit of masonry salts on the stone surface usually near joints. The presence of these salts is an indication that water has gotten into the back of the masonry either through open joints or inadequate flashings and has dissolved soluble salts in the masonry. As this solution comes out to the surface from the pulling action of the sun and wind, the water evaporates and deposits the salt which again crystallizes, forming deposits that disfigure the marble and catch dirt readily. If removed in time they can be easily gritted off, but if built up through neglect it may be necessary to sandblast or chisel them free. It is vital to correct the original condition by repointing or reflashing.

Occasionally efflorescence is caused by condensation in unheated and unventilated rooms. Condensation can be prevented by proper heating or by ventilation. Vents can be installed in the walls, windows, or doors to provide an exchange of air.

Repointing and inspection of joints is usually undertaken at the time of cleaning a building, except when the efflorescent condition above is noted.

Interior wall marble should be washed with clean water periodically to remove dust and any oily or smoky deposits from heating plants. Floor marble must be washed frequently, oftentimes daily, depending on the amount of use. This washing procedure applies also to polished marble building-fronts. Decorative dark marbles should have invisible films of lacquer or wax to retain their polish and color.

Use clean water and soft-non-gritty cloths on the wainscoting and base. Chamois can be used to wipe dry, preventing water spots and streaks. On the base it may be necessary to use a soapless, non-abrasive cleaner in the water. Sometimes in corridors where people gather or near elevator lobbies, perspiration stains and dirt from hands will build up on the wall. In this case use a soft cloth dampened with a powerful solvent designed for oil and grease stains, but containing no harmful acids, to clean the area; then, wipe dry and wash the area with water containing a soapless cleaner.

Cleaning Marble Floors

Wet marble floors first with clean water. Prepare a shaker out of an old can with tight cover and fill with a marble detergent. Sprinkle the wet floor very sparingly with the detergent and then mop or scrub. Clean small areas and remove dirtied water as soon as possible and rinse thoroughly, preferably using a different mop for this clean up. If dusting or white streaks appear after the floor is dry then too much detergent has been used or the floor has not been properly rinsed.

Avoid scratching the marble floor with the metal parts of the mop. A wise precaution is to attach bumpers to or wind cloth around the projecting parts.

Stain Removal

Stain removal is almost a separate part of marble cleaning. It uses different compounds than the general cleaning of either outside or interior marble, it must be separately done to a specific area and not simply made part of the general cleaning technique, and most important of all it requires persistent effort.

It is essential to remove a stain from marble as early as possible before it becomes a "permanent fixture." Go about the stain removal systematically by first diagnosing the type of stain, second by removing its source, and third, by applying the correct cleaning materials.

The diagnosis of stains is easier if you can examine the stain closely and find the cause. See whether metal fixtures, bolts or trimming have rusted, whether wood is around a foundation or has been used as a shim in a joint, whether bird droppings, leaves, bud shells from trees, etc., have lodged on projections, or whether oil or grease has gotten on the marble. If no obvious answer is immediately visible, these suggestions may help. Treatments for

stains from these sources are given later.

Oil and grease stains are usually circular spots with the center darkest. If the surrounding stone is wetted this spot becomes lighter than the surrounding area because water will not penetrate it. An oil solvent cleaner should be used.

Organic Stains

An organic stain is caused by wood, bark excelsior, paper, leaves, bugs, seeds, bird droppings, etc., which decay in the presence of moisture. It is well to remember that decaying matter around or in a foundation may go into solution and travel up through a marble wall quite a distance before it shows a stain where the water evaporates. These stains are usually pinkish-brown in color, sometimes in the shape of the article causing the stain, but often covering a larger area. Sidewalks are often subjected to this in the spring from seeds, nut shells, etc., of overhanging trees. These stains, once the source is removed, will in time disappear with sun and rain. To remove them quickly use a bleaching action.

Metallic Stains

Metallic or rust stains are caused by the oxidation of metals and are usually brown or rust-color, although copper and bronze stains are green and lead stains are yellow orange. They take the shape of the article that has oxidized with slight fanning out all around or are streaked in the case of run-offs.

After diagnosis, remove the source, wet the surrounding marble to prevent spread, and apply the treatment that seems to be indicated. Several applications of it may be necessary or possibly a combination of stains may require the use of one treatment followed by another. The bleaching treatment should be last where more than one treatment is necessary.

Sometimes it is necessary to prolong the usefulness of a cleaner over a stained area and this is accomplished with a poultice. Liquid cleaners are poured into a container and whiting, talc, marble dust or a marble detergent is added until a thick paste results. In the case of a powder cleaner these materials are mixed into the poultice material and made into paste consistency with water.

The poultice is applied to the stained area, or over the whole wall in the case of wainscot cleaning, with a wooden paddle or trowel, to a depth of about one-half inch and allowed to slowly dry for varying lengths of time as mentioned in the specific treatments following. It is advisable in general poultice cleaning with a marble detergent to cover the area entirely, retard drying with damp cloths for 24 hours, and then to leave the poultice in place for another 24 hours.

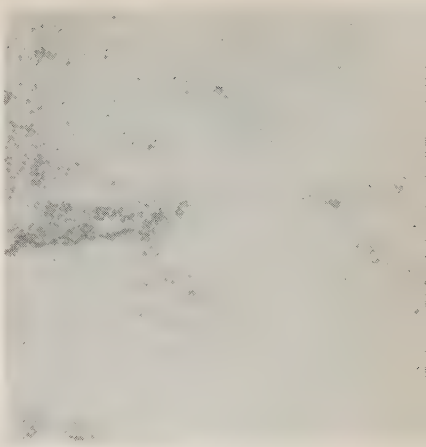
Most poultices should be removed and discarded, except certain detergent poultices which may be used over and over again, and the stone flushed thoroughly with clean water until all the poultice is removed.

For oil and grease stains apply a poultice containing a solvent cleaner over the spot. Leave in place until the poultice is dry. For organic stains chlorine bleaches may be used in poultice form, but hydrogen peroxide is preferred. Secure the hair-bleach variety (17 to 20 percent volume). Pour some into a glass or pure aluminum dish and make a poultice. Quickly pat this on the stained area and add a few drops of household ammonia to the poultice. Use the cap of the bottle or a dropper to avoid adding too much. Use rubber gloves when handling the peroxide. Remove the poultice when the bubbling action stops and flush into ground or sewer to avoid combustion.

On flat stones, liquid peroxide may be poured on the stain area and ammonia added to it without resorting to a poultice. On vertical areas poultices are required.

Use a crystal cleaner which will reduce insoluble colored iron salts to colorless soluble ones to combat iron stains. Superficial rust can

(Continued on page 44)



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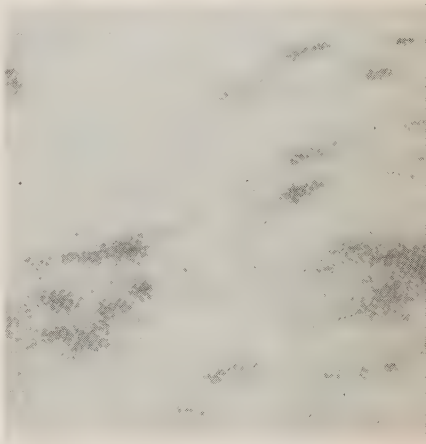

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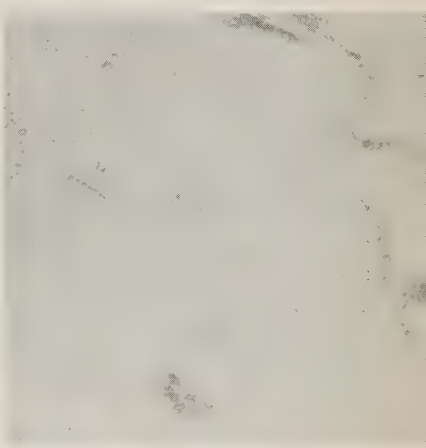
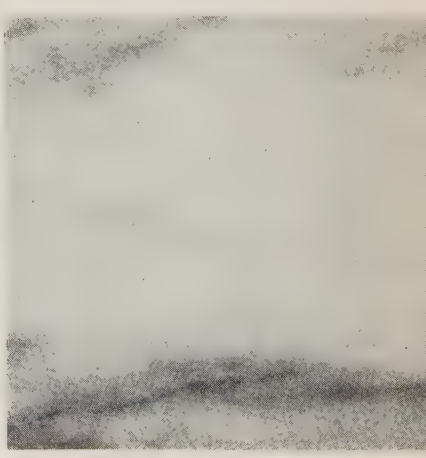


REMOVED by hydrogen peroxide bleach

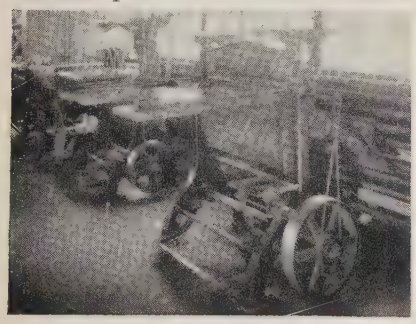


REMOVED by oil solvents and H_2O_2

The Story of

More and more industrial plant managers are becoming concerned with the problem of noise. What has focussed attention on this problem in recent years is the rise in compensation claims by employees who have had their hearing impaired by long exposure to the noises of constantly moving machines, such as pneumatic chippers, drop hammers, hydraulic presses, punch presses, printing presses and textile looms. One mid-Western company alone is faced with the possibility of paying out 500 thousand dollars in claims based on workers' loss of hearing. Hundreds of other companies are similarly beset with this recently recognized problem. One industrial observer estimates that claims for loss-of-hearing could reach $2 billions right now; another avers that if these estimated $2 billions were decided in favor of workers, it would give rise to another $14 billions worth of claims from workers—many of them retired—who had not given any thought to it before.

Evidence that industrial racket is a serious problem is the news that a number of state legislatures have or are contemplating bills altering present compensation laws to require payments in cases of hearing loss by employees. New York State's workmen's compensation law, in fact, is rather definite about it—it clearly states that any employee whose hearing has fallen below average as a result of plant noise can claim a compensable loss. The one thing that has prevented a river of claims from inundating New York industrial firms is an administrative ruling which requires the worker to be away from the injurious noise for 6 months before he can receive compensation. Fearful of the potential financial losses involved, a number of New York manufacturing firms have banded together under the aegis of the Associated Industries of New York State, Inc., which is stumping to change the law so that compensation will be paid on the basis of actual wages lost as a result of ear injury.



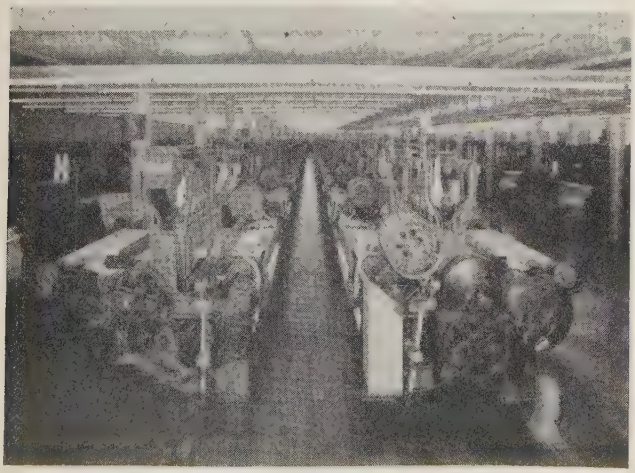
Extra-heavy perforator machines are mounted on felt pads for vibration isolation.

There are a number of tangled skeins snarling up the noise problem, which make the solution difficult. Interpretations differ radically from state to state as to how much compensation should be paid—should it be paid on the basis of the actual wages for time lost due to hearing impairment, or on the basis of a flat settlement for the disability regardless of time lost? There is also confusion as to what actually constitutes hearing loss—should it be total loss, half loss, or partial?

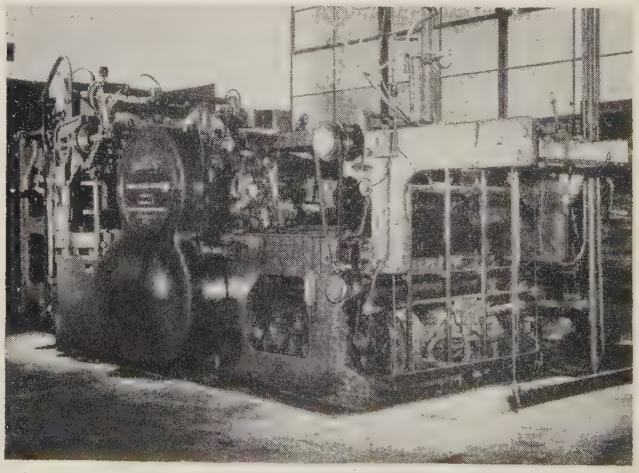
"Average" Hearing Standard

In New York, hearing loss is interpreted as proof that a worker's hearing ability has been lowered from a predetermined "average" level for all workers—but, of course, evidence has to be supplied as to what level of hearing the worker had when he was first hired, or first exposed to noisy machines. Massachusetts recognizes total deafness only, no partial losses, while Wisconsin takes the medium approach. In Wisconsin they consider the fact that the average worker's hearing ability diminishes anyway as he or she grows older, regardless of exposure to noisy machinery—so they have established averages based on ages.

Hearing loss is only one of the problems involved in excess industrial noises. There is a definite safety angle involved, too. Employees who have impaired hearing are



Textile mill with hundreds of vibrating machines uses felt pads cemented to machine feet and floor to check clatter.



Large printing press rests entirely on felt pad, isolating it and keeping its vibrations from spreading to flooring.

Vibration Isolation

by **WILLIAM C. KING**
Exec. Vice-President
The Felters Company
Boston, Mass.

What it is . . .

How it cuts noise

Methods & Materials

often likely not to hear warning signals, calls by fellow workers, approaching vehicles and noises in a machine which indicate dangerous conditions such as loose shafts or bolts, or broken parts. Excessive industrial noise also fatigues workers. Fatigue leads to loss of concentration, makes employees accident prone, and lowers mental aptitude, thereby reducing output, efficiency and quality of work. Continued exposure to loud noises also irritates workers' nerves, with resultant loss in reflex ability—a dangerous condition in itself. It has even been found to raise workers' blood pressure. Absenteeism and labor turnover are definitely attributable to too much plant noise.

Slight Drop—Big Difference

While they are hasseling with state compensation boards, hundreds of manufacturing firms are doing something concrete to decrease noise. A drop of 5 to 10 decibels in the overall noise of a shop, or of a given work station is very important—it could spell the difference between loss of hearing, and maintaining normal hearing.

Most people speak in a range between 45 and 75 decibels. They can tolerate noises in the 75 d.–100 d. range for reasonable periods without discomfort; when noises rise above 100 decibels, they become nuisances and in the 130 d. range they become positively painful to endure for more than brief periods. Prolonged exposure to noises in the 100 d. and over bracket is bound to impair the hearing ability of workers, and cause other physical conditions mentioned above.

To give an idea of the hearing hazards of some industrial equipment, consider the decibels attained by a few: punch press 100; hydraulic press 110; boiler factory 120; drop hammer 120; pneumatic chipper 130; jet engines 150. There are certain occupations in which there is evidence of noise being detrimental to aural sensitivity. Boilermakers' deafness is quite common, for example; tube train drivers sometimes experience temporary deafness owing to the high level of noise. One source states, "Machinists, blacksmiths, coppersmiths, boilermakers, weavers and workers in trades of similar noise exposures, have all shown a substantial percentage of total and partial deafness, while only a lesser percentage retain their normal hearing."

A Coupled Problem

Coupled with the problem of industrial noise is the vibration of constantly moving power machinery. Plant operators have been much more aware of this problem, and hundreds of plants have been successfully combatting vibration for a couple of decades. In so doing they were abating the noise volume simultaneously. Excessive machine vibration has a safety angle, too, in that it can cause the breakdown of parts of equipment, which may result in bolts, nuts or other parts of machinery breaking loose and injuring workers. But the most serious aspect of excessive machine vibration is the monetary loss to factory owners from shaking high speed mechanisms out of alignment; wear and tear on machinery, floors, walls and windows; damaging delicate parts and slowing production.

One way of attacking the noise problem in industrial plants, is, of course to try to eliminate the source of the noise as much as possible by alterations in gears, moving parts, and surfaces of parts which strike together. Installation of acoustical materials on ceilings and walls is another effective measure.

Similarly, some vibrations can be eliminated through improved design of unbalanced rotating or reciprocating components of a machine, couplings, shafts, etc.—the source of vibrations. But these methods are limited and often impractical, since it is sometimes not feasible to change the physical structure of machinery for fear of affecting the results.

The most common method of cutting down the decibels and dampening vibration is mounting machinery on pads or units designed specifically for this purpose. There are a number of different types of sound reducing and vibration-isolating materials—felt, rubber, cork, wood, paper, composition, plastics and metal springs.

(Continued on the next page)

In selecting the proper material on which to mount power-driven machinery, a plant production manager or maintenance supervisor should consider: Does it (1) support the weight of the machine without deflection; (2) absorb machine vibration without transmitting it to surrounding structures; (3) withstand repeated loading and pressures without setting; (4) resist deterioration from air, water, oil, grease, acids and other substances; (5) maintain its anti-vibration and noise absorption properties for long periods of time; (6) remain easy to apply and remove, if necessary. Cost, obviously, is an important consideration, as well.

Cork for vibration-isolation comes in a board, varying in thickness from 1 to 4 inches; usually in 3-foot lengths; and with 3 ranges of densities: light (700–2000 psf); standard (2900–5000 psf); heavy duty (5000–7200 psf). The boards are easily cut to sizes needed. Cork anti-vibration material is often used in floating and sunken foundations for heavy machinery mounted on concrete bases. The cork board separates the concrete base from the concrete floor slabs, deadening the impact and restraining the vibrations from being transmitted from machine to floor.

In some cases, instead of mounting a battery of machines on such cork pads, the entire floor slab is actually mounted in sheets of cork at the points where it is connected with the building walls. Thus the concrete floor does not touch the walls, and the cumulative vibrations from a number of machines are not transmitted to the wall.

Semi-hard natural or synthetic rubber is also a commonly used anti-vibration and noise-deadening material. It is frequently used, in fact, inside a machine, such as a casing around motor shafts, to reduce vibration at the source. Rubber is also bonded to steel flanges and bolted to the floor in the traditional manner of other vibration-isolation pads.

One special type of vibration pad assembly utilizes a rubber tube through which the floor bolt passes; a rubber pad separating two steel plates, one on the floor, the other under the machine support; and a rubber holed-out disc separating the machine mount from the washer and bolt nut. This has been used effectively for dampening low frequency vibrations, but is not recommended for frequencies from 100 to 650 cps.

In considering the use of rubber, it should be borne in mind that it has a certain amount of expansion from the weight of the load it is carrying, and may be affected by extremes of temperature. Natural rubber pads should be coated with oil-resistant varnish if they are to be exposed to oily atmospheres. Synthetic rubber pads are generally oil resistant.

There are a number of special steel mounts on the market, some involving springs. One steel mount is a self-levelling device in which an isolator resilient material is encased within a steel frame. The machine foot is bolted onto the mount, and by turning the bolts which have locknuts, the machine can be adjusted level. These mounts have the advantage that machines can be quickly moved around with the aid of a fork truck and other transportation devices.

Most Widely Used Material

The most widely used substance for vibration isolation and noise abating is the felt pad under machine mounts. Felt pads are popular for a number of reasons, not the least of which is their economy and ease of installation. Felt pads come in thicknesses ranging from 1-sixteenth inch (for desk machines) to 3 inches; and in varying densities from 10 psi to 250 psi. Felt pads are used for anchoring machines of all types from small lathes to 450-ton hydraulic presses, and may be cemented to floors of every material except asphalt tile. The economy factor is important, for experience with a number of typical installations has shown that labor costs for a typical job are 50 to 75 percent less than in ordinary machine installations. The reduction of installation labor costs alone—particularly in eliminating the need to drill lag bolt holes in machine mounts and in concrete—is an important saving.

Felt pads first came into use as vibration-isolation material about 20 years ago when Lawrence H. Hansel, then general sales manager of The Felters Company of Boston, Mass., got the idea that this was a likely market for his company's heavy pad felts. To back up his theory he employed an independent firm of consulting engineers, to conduct a series of research tests on the reduction of vibration and noise after mounting textile machines on felt pads.

A trio of engineers tested the material first on textile looms and spinning machines. A series of carefully controlled tests revealed that transmitted vibrations were reduced from 50 to 85 percent, with an overall average of nearly 60 percent; and noise volume was decreased an average of 25 percent. Heartened with these results, Mr. Hansel had his company install all their moving equipment at the Millbury, Mass. mill on felt pads, the first installation of its type.*

Since that time more than 750 thousand textile machines alone have been mounted on felt pads. In a typical installation to test the efficiency and economy of felt mountings, 100-W–2 Crompton and Knowles looms were anchored with felt pads and maintenance costs compared over a 4-month period with 80 looms not so mounted. On this basis, the savings in maintenance per loom per year amounted to $15.48. The felt pads cost $8.20 per loom. Thus, in this instance, the pads paid for themselves in about 7 months, with, for all practical purposes, an indestructible life still ahead for them.

The next field the company tackled was printing. The results of a pilot installation were equally as impressive as those in the textile industry. An official of one of the first companies to try felt pads, said, "After mounting our new 12 by 18

Kluge on the pads, only the rhythmic click of the machine was audible. The feeding of folders was expedited through the absorption of jittering of the machine on the concrete floor. The guillotine cutter is easier to operate—and much less noisy."

Five years ago, a large printing firm in Fort Wayne, Indiana, built a new plant with concrete floors and a steel roof to keep pace with rising building costs. Twenty presses and pieces of bindery equipment were mounted on vibration-isolation felt. The engineers reported that the pads changed the noise to a less annoying kind of sound, besides reducing it. Squeaks, groans, sharp clicks and buzzes, all most annoying sounds, were reduced effectively by the felt pads. And where the original level of sound was around 110 db, the new ranges ran from 55 db for the office to a top of 98 with an overall average level in the mid-80's, an improvement of 25 percent.

Since the original print shop installation of felt pads, hundreds now have them under box folding machinery, compressors, cylinder presses, die-cutting machines, die-stamping machines, drills, folding machines, vertical presses, etc.

Use of felt pads to anchor other power-driven machinery spread to scores of other fields. Felt has been successfully used and is being increasingly resorted to for isolating such production equipment as shoe machinery, lathes, grinders, milling and heading machines, drills, marine propulsion diesel engines, air compressors, die-casting machines, forging hammers, pebble mills, washing machines, electric motors, pumps, riveting machines, stokers, and office equipment of all types.

Interesting Applications

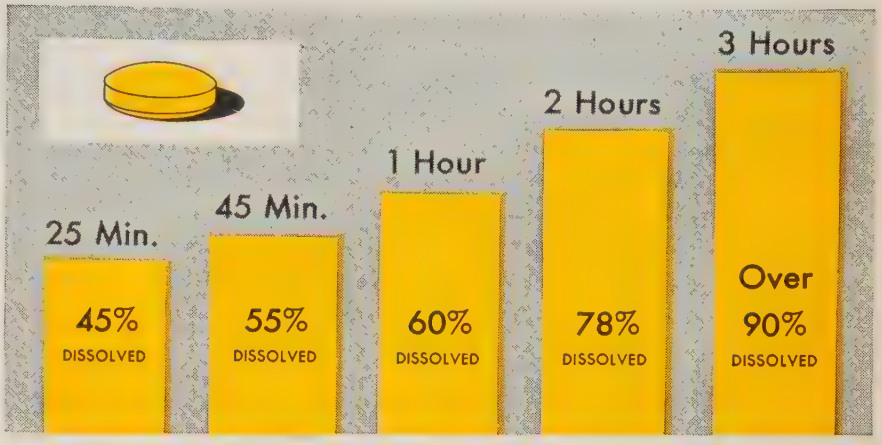
An interesting application of felt pads for office equipment was recently made by a major life insurance company in New England. They had been troubled with top-heavy drawers filled with folders, causing file cabinets to tip over when one or two were pulled out, a serious hazard to employees. They ended this nuisance by cementing the cabinets to felt pads which in turn were cemented to the floor—3 grown men couldn't budge the cabinet by hanging onto the top drawer after the cement had set.

Easy removability is one of the important qualities of felt pads. To move machines already mounted on felt pads, a solvent is applied which loosens the cement. The felt pads can be recemented in the new spot—and they usually outlive the machines.

Felt pads are engineered directly to machines—there is a wide range of felts to accommodate different types and weights of machines. In engineering felt pads to a machine, not only the weight of the machine is considered, but the area of mounting or base, the force of impact, and the vibration frequencies at different points. Rather than mount ma-

Controlled dissolving action is the reason Morton Impregnated Salt Tablets give fast relief—without nausea

This chart shows the controlled dissolving rate of a typical Morton Impregnated Salt Tablet



Within minutes, the average person begins to feel better, work better, when he takes Morton Impregnated Salt Tablets. For as soon as the tablets are taken, essential body salt lost through perspiration begins to be replaced—but at a gradual rate, so as not to cause nausea.

For more than three hours after Morton Impregnated Salt Tablets are taken, they continue to fight heat fatigue by supplying salt. Careful, uniform coating of the salt crystals in each tablet results in controlled dissolving action —the reason Morton Salt Tablets give such excellent results.

Morton Yellow Impregnated Salt Tablets come in a handy, disposable dispenser. Plastic and heavy-duty aluminum dispensers are also available, as are plain salt tablets.

Place your order this week with your local safety equipment distributor. If he cannot supply you, write:

MORTON SALT COMPANY
Dept. SM-8, 120 South LaSalle Street
Chicago 3, Illinois

Complies with Federal Specifications SS-S-31e for Type III, Class C Impregnated Salt Tablets
U. S. Patent No. 2,665,236
Patented 1954 (Canada) No. 501,316

(For details, use Key # H-11 on card on page 71)

chines on felt pads of maximum thickness, experience has shown that best results are obtained with felts of optimum thickness. The greatest isolation efficiency is accomplished by using the smallest practical area of felt that resists the load placed upon it without excessive compression.

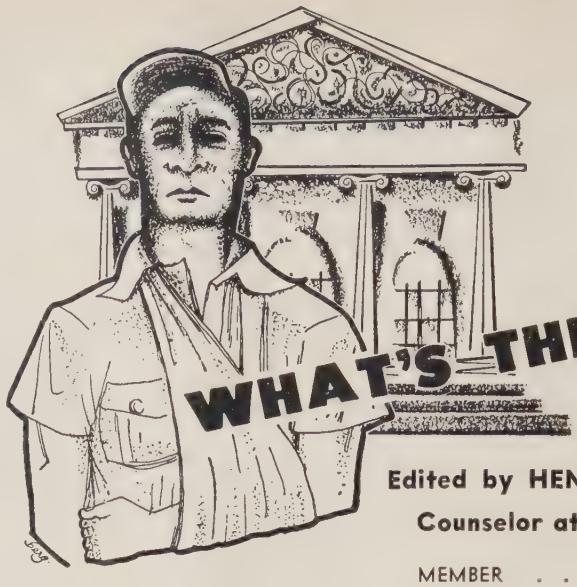
Felt pads are cut to the area of the machine footings with a very small overlap. General purpose felts of varying thicknesses are used for machines which fall within the range of 10 to 100 psi. About 80 percent of all vibration problems fall within the medium load range of 10–50 psi. Heavier pad felts, of course, are available for loads exceeding 100 psi—some felts will withstand maximum loading of 250 psi. For light loading, in the range of 10 psi or less, softer felts are used.

Usage Advantages

Long-term tests show that felt will not break down under repeated impact loads; that it is resistant to oil and grease and mild acids; that it will not deteriorate with age; it will not ravel when cut; it will not spread, "give" or set to any degree that would place a machine out of alignment. Its success as an isolator stems from the spring-life and high indestructible character of the wool fiber of which felt is mostly composed. Wool fibers are natural springs, and thus vibration isolation, cushioning and padding are among the natural mechanical functions of wool felt.

It is apparent that diminishing noise is sound business for any manufacturer in the results obtained: improving the morale, energy and effectiveness of workers; not to mention saving compensation payments. And dampening vibration gives a better shake to any business by minimizing wear and tear of machinery, floors, windows and walls. In short, noise reduction and vibration isolation are plus safety factors for just about any type of manufacturer.

* Further details concerning this product may be obtained on inquiry to the Editor.
Pictures by courtesy of The Felters Company.



Edited by HENRY M. GROSSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
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MINOR

Hazardous Employment

A 15-year-old girl employed on a dairy farm was awarded compensation for burns and the loss of a thumb and finger when she fell against a gas heater in a dairy. The Court ruled that employment where power was used was hazardous employment within the meaning of the statute. The court rejected the dairy owner's contention that the dairy operation was incidental to the operation of the farm, and as a farm, the compensation act would not apply.

F. L. MILLWEE DAIRY VS. COFFELT
Oklahoma Supreme Court. No. 36,597.
March 22, 1955.

Many states provide by statute that employers are liable for double compensation, when they employ minors who are under the statutory age for working, when the minors have no working papers, or when they are put to work in what the statute terms "hazardous employment." The fact that the minor may give his employer a false age does not usually constitute a valid defense, so that it becomes mandatory upon any employer hiring a person to require proof of age. Many states, of course, may subject the employer to criminal prosecution for illegal hiring of minors so that there is an additional compelling reason, to an employer, to be sure of a prospective employee's age.

CONTEST WINNER

Course of Employment

The petitioner had journeyed with the manager of his insurance agency to another town to attend a luncheon as a reward for winning an insurance sales contest. The luncheon ended at 2 o'clock and the employee and his superior did not leave the club until about 5 P.M. About 8:30 P.M., the employee was injured in an auto accident on his way home.

The court held that the employee was in the course of his employment in attending the luncheon and allowed him to collect for workmen's compensation benefits. The court reasoned that the employer benefited from the sale of the insurance and the luncheon served as an incentive for the sales. The employee was not compelled to attend the luncheon, but this did not take it outside the course of his employment as the superior position enjoyed by the employer permits him to exercise compulsion indirectly. The fact that the employee was not reimbursed for his expenses in making the trip did not mean that the trip was outside the course of employment.

LAWRENCE VS. INDUSTRIAL COMMISSION
Arizona Supreme Court. No. 5884.
March 8, 1955.

GETS-A-LITE GUARD and GUIDE

Quickly and Easily Installed by Anyone — No Tools Needed!

- Simply slip GETS-A-LITE GUARD AND GUIDE over the fixture, as illustrated.
- Made of indestructible spring steel wire. Nothing to break, get out of order or replace. Will last indefinitely.
- Once installed, GETS-A-LITE GUARD AND GUIDE is NEVER removed.
- Nothing to unlock, fuss with or lock, when changing lamps.
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- Available for 40 watt and 100 watt fluorescent lamps.

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(For details, use Key # H-15 on card on page 71)

SAFE, EFFICIENT INDUSTRIAL CLEANING COSTS LESS----WITH NEW BENNETT UNIVERSAL AIR-OPERATED CLEANER!
Fits any standard air hose
The Bennett cleaner is safe because it is completely non-electrical. There is no danger from sparking, because there are no moving parts.
The Bennett cleaner saves time and money! It's light and highly portable. Cleans walls, shelves, beams, storage bins and other out-of-the-way surfaces with a minimum of labor!
Powerful suction developed by compressed air (approximately 90 lbs. pressure) . . . adequate for all industrial applications. Highly efficient WET or DRY pickup.
Adaptable to any industrial application! Picks up metal chips, glass particles, etc. Interchanging bag with hose permits removal of liquids from any normal surface or tank.
NO MOVING PARTS! Unlimited life . . . no danger from sparking.
COMPACT—POWERFUL! Highly efficient WET or DRY pick-up.
LIGHT—PORTABLE! Body of aluminum casting.
EASY TO OPERATE! Designed to reduce operator fatigue. Hand-operated metering valve.
Special fittings and brushes make the new Bennett cleaner adaptable to any industrial application. Interchanging bag with hose makes it adaptable for removal of liquids from any normal surface or tank.
NO ELECTRICAL CONNECTIONS NECESSARY!
COMPLETE UNIT WITH 5" ALUMINUM NOZZLE, AND BAG
$29.95 EACH
M-M-A, Inc., Lancaster, Pa.

(For details, use Key # H-14 on card on page 71)

BAKER'S ASTHMA

Caused by Flour Dust

Claimant's employment as a baker necessitated the inhalation of powder from the flour. This inhalation resulted in the disease known as baker's asthma, or bronchitis. The court, under the New York Workmen's Compensation statute, allowed a compensation award under the provisions of dust diseases.

HENDLER VS. CAYTON BAKERY, INC. (1941) 31 N. Y. S. 2d 299.

Note

It is interesting to note that a New Mexico statute Chapter 29, (S. D. 7) Effective Feb. 19th, 1955, provides that if death or injury to a workman results from the negligence of an employer who failed to supply reasonable safety devices, although the safety devices are not prescribed by law, the compensation payable shall be increased by 50 percent.

Industrial Laboratory Accidents Increasing

A GENERAL INCREASE in research and quality control work in large and small industries has resulted in an "alarming" upturn in the number of laboratory accidents, according to J. O. Bengston, president of the Chicago Apparatus Co.

"Many of these accidents are not the reportable type," Bengston said, "and there is presently no statistical material available for comparative purposes. Our field men have reported, however, that the accident rate is increasing far beyond the rising rate of laboratory activity."

Bengston said the increased number of accidents indicated a lack of cooperation with laboratory and safety directors within individual companies, as well as a failure to develop a proper mental attitude in the laboratory, and failure to make use of available safety devices and safety engineered laboratory tools.

He urged chemists and others engaged in laboratory work in industry to abide by safety rules, and to use apparatus and equipment with safety features.

"There has been a great advance in incorporating reasonable safety features in laboratory items," he said. "Manufacturers have themselves done a great deal of research to make their products safe as well as functional."

Bengston cited such examples as the heating mantle, clamps, safety tongs, glass tubing manipulators, face shields, pipette fillers, goggles, respirators, asbestos and rubber gloves, air stirrers, stopper removers, and bottle and carboy tippers.

Where constant temperature ovens or other equipment falling under Underwriters' Class I, Group D, classification as "Hazardous Locations" are necessary, Bengston said, laboratory directors should consult qualified representatives of laboratory supply houses for recommendations.

B R E C K

FOUR WAYS TO PROTECT SKIN FROM INDUSTRIAL DERMATITIS

BRECK pH7 PROTECTIVE CREAM protects the hands against irritants such as lubricating oils, cutting compounds, tar, greases, rubber dust, aromatic and hydrocarbon solvents, fiberglass, paint and iron dust. It forms a non-sticky, invisible film over the skin. Breck pH7 Protective Cream is easily applied. It is easily removed with Breck Hand Cleaner or soap and water.

BRECK WATER RESISTANT CREAM protects the skin against the action of water and water solutions such as liquid coolants, emulsified cutting oils, mist and spray from alkali baths and plating solutions, cement and lime. It covers the skin with a light, protective film which is not slippery or sticky. Breck Water Resistant Cream has a pH value of 8.

BRECK HAND CLEANER helps eliminate the use of harsh, gritty, highly alkaline or defatting hand cleaners. It does a thorough cleansing job, yet is mild and non-irritating to the skin.

BRECK WORK CREAM is used after exposure to degreasing materials and at the end of a day's work. It substitutes fatty materials for the natural skin oils which have been removed. In this way Breck Work Cream helps keep the hands smooth, pliable and lubricated.

A Breck Industrial Preparations Booklet will be forwarded to you upon request.

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(For details, use Key # H-13 on card on page 71)

industrial hygiene

Industrial Health Conference

THE SECOND ANNUAL Pacific Northwest Industrial Health Conference has been set for September 12 and 13 in Portland, Oregon, according to Attendance Chairman, R. Walter Ager of the Hyster Company. All sessions will be held at the Multnomah Hotel.

Sponsored by the Portland Chamber of Commerce, the first conference, held last year, was attended by some 315 registrants. It is expected that between 400 and 500 persons will register for this year's meeting. A number of nationally recognized industrial health authorities will be featured during the two-day program. Two features of the 1955 meeting will include an industrial health program for the small plant and a report on how the cardiac can work.

Information, program outline and registration blanks for the two-day session can be obtained by writing to: Pacific Northwest Industrial Health Conference, 824 S. W. Fifth Avenue, Portland 4, Oregon.

Cure for the Common Cold

THE PROBLEM OF the common cold, one of man's most troublesome and least understood ills, appears more likely of a solution than at any time in the past," Dr. Thomas Francis, Jr., professor of microbiology at the University of Michigan, told a business and banking executives meeting in reviewing the objectives of the Common Cold Foundation.

"This renewed hope that the common cold can be added to the group of diseases man has conquered or tamed," added Dr. Francis, "stems from the application of the Enders-Weller-Robbins tissue culture technique which apparently is permitting the growing of some of the cold viruses.

"Researchers believe that in the foreseeable future a vaccine against at least one family of cold germs can be perfected. These are the so-called 'APC' (adenoid-pharynegeo-conjunctival) viruses."

The spiraling cost to industry of the common cold was emphasized by Dr. Melvin N. Newquist, Medical Director of the Texas Company, and Chairman of the Medical Advisory Committee of the Common Cold Foundation.

"We medical directors know the common respiratory diseases including the common cold account for approximately 50% of all employee absences. And with the current trend to cut the waiting period for sick benefits down from seven to three to one or no waiting days at all, the common cold is becoming a constantly increasing problem and cost to every employer.

"A second factor in this upward spiral," Dr. Newquist said, "is the increased cost of doing business and the increased cost of living. Probably our greatest loss comes in production, as this applies not only to the worker who is absent, but also to the one who tries to stay on the job, and because of his cold has greatly impaired productivity."

Dr. Newquist urged industry on the basis of the encouraging facts presented by Dr. Francis to support research on the common cold through contributions to the Foundation.

"Previous to the development of this tissue culture technique," he said, "we have felt the problem was so complex that it was almost insoluble. Now we have real reason to hope that at least a part of it can be solved and therefore merits our support."

The immediacy of the need for additional funds to widen the research activities on the common cold at established medical schools was voiced by Mr. John P. Syme, Vice-President and Assistant to the Chairman of the Johns-Manville Corporation, and newly elected President of the Foundation.

"Comparatively little research," said Mr. Syme, "has been done on the common cold. This is, I am told by our Scientific Advisory Committee, because such research in the past has been not only cumbersome, time consuming, and expensive, but, up until the time of the new techniques described today by Dr. Francis, it was also considered practically a dead-end street.

(Continued on page 34)

IF HIS

FOOT TROUBLES ARE a source of industrial accidents often completely overlooked in a plant safety program says E. F. Thomas, assistant manager of industrial relations for Marquardt Aircraft Co. He told a recent session of the Industrial Committee of the California Association of Chiropodists in Los Angeles that, although the company reached the million-hour mark without a lost-time injury last September, much remains to be done in clearing up foot disabilities among employees.

Survey Shows Foot Problems

As a result of a spot survey among 30 employees—15 women from the shop and office and 15 men from the shop—Mrs. Martha Lindsey, company nurse, discovered that 12 of the women had defects of the feet and all of the men suffered from some type of foot disability. Most common defects: overrun heels, athlete's foot, corns, and callus formations. All of these disabilities aggravate the so-called human factor, which is the greatest contributing cause to industrial accidents, Mr. Thomas says.

"Regardless of how proficient a man may be at his job, his safety status suffers if he is having mother-in-law trouble, financial problems, or if his feet hurt. Elements such as these make up the human factor in administering a safety program."

Here's Something You Can Do About It

This is what one safety man, E. F. Thomas, at the Marquardt Aircraft Company, recommends for the aching feet problem . . .

1. Broaden pre-employment physical examinations to include a good look at the prospective employee's feet.
   "This doesn't mean that we would turn down candidates for bad feet. It would mean simply reappraising the individual work situation and advising the candidate to see a foot specialist as soon as possible."
2. Broaden group insurance programs to include medical visits which will allow the employee to receive foot treatment.
3. For larger companies, add a chiropodist to the medical staff; and for smaller companies, insist that the doctor who does the physical examinations call attention to foot troubles and recommend treatment.
4. Plant medical directors should demand proper footgear for employees. A safety shoe program would benefit both employee and company. Get women out of two-inch spike heels and men out of work shoes that should have been thrown away months ago. Here is an opportunity for the plant safety committee to participate in a worthwhile educational program.

Original material courtesy of Marquardt Aircraft Co.

When Mr. Thomas joined Marquardt in March, 1954, he inherited an administrative headache in the safety program and an accident frequency rate of 11.2 for 1953. This compared with an over-all aircraft industry rate of 6.36 for the same year. He also found that the nature of Marquardt's operations made it difficult to plan a safety program. The company is a research and development of ramjet engines, afterburners, and components and accessories for both turbojet and ramjet powered aircraft.

"In the development of these engines and afterburners, we in safety work are very much hampered by the lack of production techniques in the planning of our program," Mr. Thomas explains. "For example, every part is a prototype—every part requires a different setup—all of which makes for a complex situation in trying to establish a safety program."

Reorganization—First Step

He tackled his new assignment by reorganizing the former 22-man safety committee, which he felt was too large to be functional. A new committee of 12 was established with 6 permanent and 6 rotating members (2 replacements every 4 months with these replacements to be named by the retiring members).

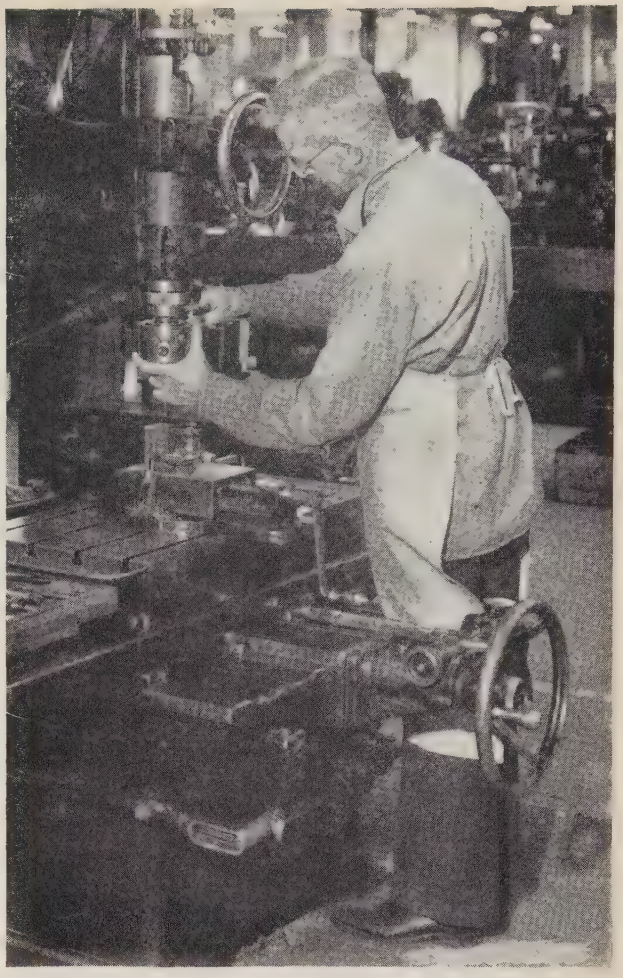
Committee members were identified by a special plant badge and subcommittees were formed to investigate each accident and near accident, calling on different members of the group each time. As added incentives, Mr. Thomas brought in outside speakers to keynote safety meetings and publicized the committee's activities in the plant newspaper.

Results from the rejuvenated safety program began to show up in April and since that time Marquardt has not recorded a single lost-time accident. Frequency rate for the first 9 months of 1954 dropped to 5.2, an 86 percent improvement over 1953.

The Human Factor Studied

With the details of the safety program ironed out, Mr. Thomas then undertook continuing studies of the human factor as it relates to industrial accidents.

Safety Suffers FEET HURT



FIRST AID & HYGIENE SERIES
more articles in September and October

"A man brings his wife to work with him—he also brings his family, his financial worries, the state of his digestive system, the hangover acquired from last night's celebration, his fears, neuroses, his daydreams and his anticipated pleasures. He brings to work with him the pressure of his community, any social aspirations his family may have, the problems of his church, his lodge or his other associations, the triumphs or defeats of his golf, his bowling or his other recreations. Accidents today seem increasingly to be due to the so-called human factor.

Foot Problem Constantly Present

"The feet are with us all the time. They are an extremely important part of the anatomy, yet they have not received the attention they so richly deserve," Mr. Thomas explains. "It figures that the so-called human factor could be affected by bad or aching feet."

As a result of data compiled from the survey of 30 Marquardt employees, Mr. Thomas found that among the women calluses were responsible for most defects. A total of 93 percent had run over heels and 26 percent complained of low chronic backaches.

Among female subjects surveyed, one made 16 visits to the first aid room in a period of 20 months and another made 10 visits in 23 months. The visits were not necessarily related to foot troubles.

Of the 15 male subjects surveyed, all had run over heels, 80 percent had calluses and 73 percent suffered from athletes foot. Four complained of back trouble.

Many Visits to First Aid Room

Eighty percent of the men surveyed for foot difficulties had made visits to the first aid room for complaints and/or injuries of one kind or another. One case had made 48 visits in 11 months, another 54 visits in 19 months and a third 53 visits in 22 months. In one case, the subject had made 10 visits in 32 months, 2 of which required medical treatment. In both instances the man was injured in falls from a ladder. His ladder climbing assignments have ended.

Mr. Thomas maintains that these statistics are indicative of the elements that go to make up the human factor in accident studies.

Not Accident Prone—Simply Human

"Was it the mother-in-law, a hangover, a bad golf game or a foot problem that caused the one statistic to visit our first aid room 54 times in 19 months of employment? This is 3 injuries per month for the past 19 months. Five years ago most safety engineers would have said this man was accident-prone. This term is on its way out because it has been hard for all of us to believe that a man could have so many injuries without learning and benefiting and thereafter preventing recurrences.

"Then it must be the so-called human factor—and after seeing this individual's feet, I would be willing to bet that in this case, the so-called human factor was his feet. To begin with, his shoes were old, worn out, and should have been tossed in the ashcan months ago. He had holes in his socks, large overgrown calluses on the bottoms of both feet, corns on both little toes, athletes foot and ingrown toenails on both great toes." The man has been sent to a chiropodist for treatment.

Picture by courtesy of Western Electric Company.
Textual material from Marquardt Aircraft Co.

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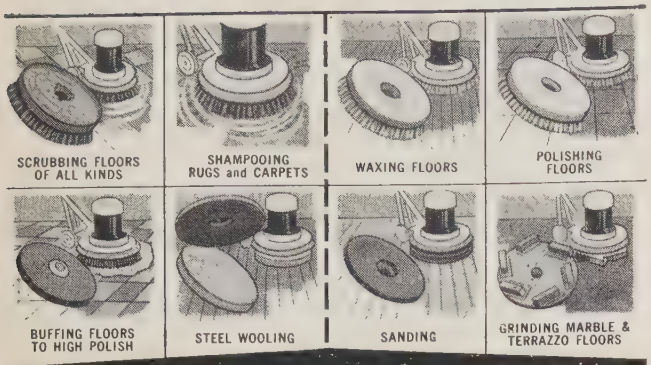
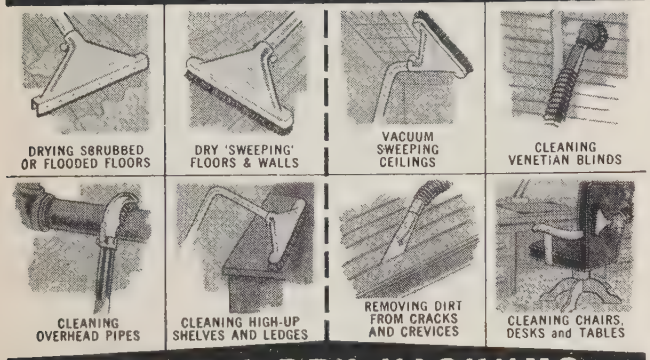


SCRUBBER-POLISHERS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(For details, use Key # H-12 on card on page 71)

Cure for Common Cold

(Continued from page 31)

"An even greater deterrent to getting qualified scientists to tackle this problem was lack of financial support. Because the cold is not a killer or crippler, it has not received the attention or support given the more dramatic diseases.

"Medical schools today are quickly recognizing the significance the new techniques have for attacking not only the problem of the common cold but also the entire range of viruses, and they are increasing research facilities and placing additional emphasis on this type of research. This means outstanding virologists are now ready to attack the problem if adequate support is forthcoming."

Mr. Syme also emphasized that research on the common cold was one activity a company could justifiably support as any progress would help in reducing employee absenteeism and thus result in direct savings.

"This is one of the primary reasons," said Mr. Syme, "why the Directors of the Foundation decided to appeal directly to industry. A second and equally important fact is that by eliminating expensive fund-raising costs the money contributed can go more directly to the purposes for which it was intended."

Air Pollution Counter

EXTENSIVE USE of an electronic instrument which measures and counts microscopic airborne particles, ranging from radioactive particles to germs, was forecast by one of its developers at the third annual National Air Pollution Symposium. Operation of the aerosoloscope was described by Morris A. Fisher, supervisor of fine particles research at Armour Research Foundation of Illinois Institute of Technology, Chicago.

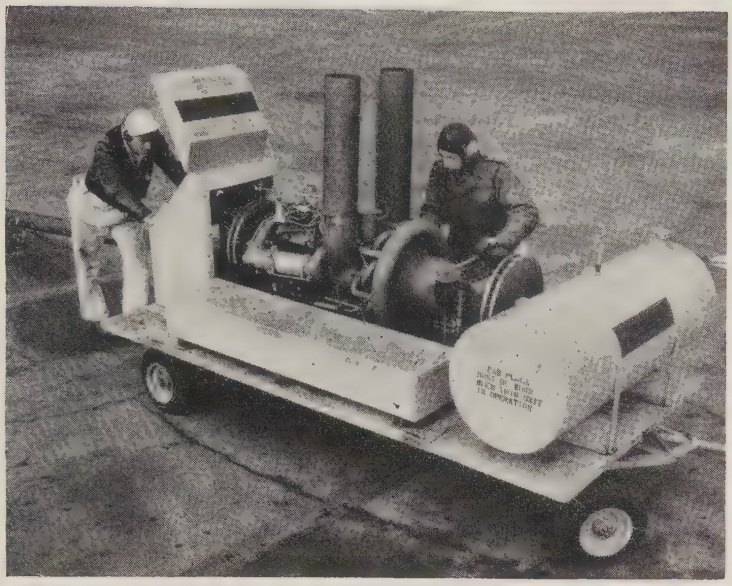
The instrument, developed by the Foundation for the Army Chemical Corps, is capable of measuring and counting airborne particles at the rate of 100 per second —1,000 times faster than by conventional methods. It will enable scientists to analyze airborne particles, such as dust, smog, moisture, and pollen, in cities, factories, and in other places concerned with particle size or contaminant control.

Fisher said the instrument can be used to count and measure airborne particles ranging in size from 1 to 64 microns (a micron is forty-millionths of an inch) in diameter. The aerosoloscope employs as its basic principle of operation the interaction between very small particles of matter and light, known as scattering.

Since large particles scatter more light than small ones, the photomultiplier tube, in connection with other electronic apparatus, can determine the size of each particle. Electrical impulses created by the photomultiplier tube when it detects the scattered light are transmitted to a set of 12 dials.

The first dial records the number of particles 1 to 1.4 microns in diameter. Each succeeding dial records slightly larger particles than the preceding one.

Personal Noise Protection in the Aircraft Industry



Men operating an engine for jet power tests are protected by muffs, ear plugs and by lead muffs in the cloth helmet.

by **SHERMAN M. WILLIAMSON, M.D.**
Assistant Medical Director
Boeing Airplane Company,
Seattle, Washington

IT IS THE RESPONSIBILITY of the industrial physician to protect the individual employee from hearing loss that is the result of exposure to industrial noise. In order to protect the employee from noises, he must evaluate his plant to see if a noise problem exists. He must make himself aware of the type of noise. Is it a constant rumbling of general factory noise or are there sharp peaks of loud noise? Is the loud noise continuous or is it interrupted? Are there sudden impacts that cause the noise? Of what intensity is the noise?

The part that the acoustical engineer can play in noise evaluation is very important. He can determine the noise level and the type of noise in areas that the industrial physician feels are critical. If the survey shows that certain areas or individual operations are in a high noise level category, then means must be found either to reduce the noise level or protect the workers. The engineer must determine if it is feasible to treat acoustically any area. He must also determine if it would be possible to treat a noisy machine to decrease the noise at its source. Acoustic treatment may solve the noise problem. If not, the industrial physician then must advise on the type of personal protective equipment to be used.

In the aircraft industry it is often impossible to screen the noise at the source; therefore, some means must be found to protect the individual worker. Basically, a personal protective device must give attenuation to the point where the noise (sound pressure level) does not cause damage. This protection must be for both high and low frequencies. In our experience there are 3 main groups for whom personal protection is required in the aircraft industry:

a. those in the riveting and production areas; b. those in the hammer shops; c. those working with jet engines. There are other smaller groups in experimental work as in the wind tunnel and the armament section that have noise exposure.

Riveting and Production (includes saw operators, spindel shapers, etc.). The noise in such areas may be of a fairly constant nature, with peaks in the immediate vicinity of an operator. Not only the riveter himself but the buckers and mechanics working in the same area are exposed. Ear plugs offer adequate protection in these areas if they are worn, but the average worker will not wear the ear plugs continuously unless he is forced to do so. Ear plugs must be fitted to the individual if protection is to be effective.

Hammer Shops. Noise for a hammer operator is greatest at the time of impact of the hammer, but with a large battery of these machines, the over-all noise level is rather constant. In general, the old time hammer operator may consider it a badge of his trade to be somewhat hard of hearing, so will not wear any protective devices except under protest.

Jet Engines. This is the area of the highest noise (sound pressure) levels and where no acceptable protective device is available. All available commercial types have been tested but do not protect adequately

against jet noise at full power. The sound pressure level about the J57 jet engine is 130–140 decibels at 100 percent power. With afterburner attached to the J57, levels of 160 decibels are recorded. All protective devices whether plugs, muffs, etc. give a rather good degree of attenuation for the high frequencies. With earplugs plus helmet-muff (the best practical protection yet available), hearing loss may still occur in some persons exposed to 130 to 140 decibels.

Selection of the type of personal protective device must be based on the type of noise exposure. Educating the worker to the use of protective devices is the first step in a plant program. The foreman must be educated first; it is obvious that a program will fail if a foreman tells his subordinates he has been in noise for years and still hears well. The average employee will not wear ear plugs unless he is forced to do so. Busy foremen cannot be expected to patrol noisy areas looking in ears for an earplug that is almost invisible. The physician can't be too enthusiastic about enforcing the constant wearing of a device which can be uncomfortable or painful.

Within our company a noise abatement committee has been appointed to study the noise problem and to make recommendations to management. Physicians are committee members. One of the functions of the committee is the study of the community noise problem. A curfew on the hours of engine runs has been a temporary solution.

Studies at Boeing Aircraft have led to the following recommendations for protecting the worker against hearing loss:

a) Limit the noise exposure time of flight mechanics working on jet engines.
b) Reduce engine-run time to a minimum. By studying engine-run requirements, our experience indicates that exposure time can be cut significantly.
c) Rotate the flight mechanics so that exposure to jet noise is not confined to a few workers. This allows more time for the ears to recover from a single noise exposure.
d) Limit the number of mechanics that are actually required to conduct the tests by (1) use of portable sound attenuation booths for observers and fire-bottle handlers, by (2) development of remote-control engine-trim devices.

Let us consider the personal protective device itself. The most discouraging factor in protection against noise is the lack of acceptable protective devices.

The Earplug. An earplug should be smooth, have no abrasive action on the external canal, be non-sensitizing, lend itself to easy cleaning and be as comfortable as possible. They must be fitted to the individual by a trained technician.

Muffs. They should fit snugly to the head and be free of projections which can catch on machinery and structures. They must clean easily and not cause undue pressure symptoms or perspiration at contact points.

Helmets. The firm type of helmet (similar to a football or crash helmet) is rather cumbersome, expensive, warm and hard to get on and off. The helmets do reduce the sound energy transmitted to the bones of the head. The face should be covered if the helmet is to give maximum effectiveness. There are also the soft cloth helmets, containing various types of muffs, that are more comfortable and do an adequate job of attenuation if noise levels are moderate.

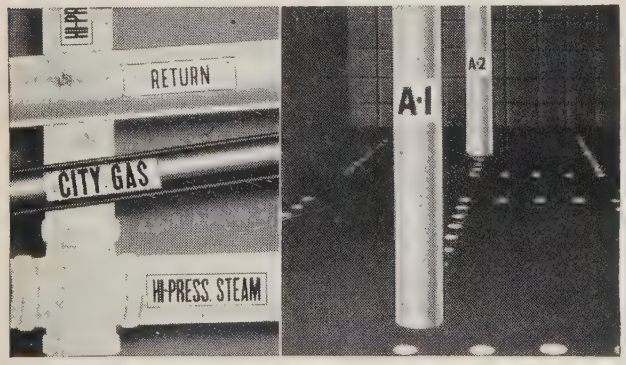
The combination of earplugs and a helmet give more protection than either alone, and must be used to protect against intimate exposure to jet noise.

After the industrial physician has determined the need for noise protection and set up a personal protective program, then he must discover whether or not the adopted measures are effective. By audiometric findings, he will be able to determine the efficiency of the protective devices. It is necessary that audiograms be performed prior to initial noise exposure and then repeated at intervals determined by the findings and the level of the noise exposure. Remember always that one must evaluate any hearing loss by taking into consideration the history and previous noise exposure of each person in a noisy area. Don't blame the hearing loss of the ex-artillery man on the noise in your plant.

Careful pre-employment and periodic audiograms will soon detect progressive hearing loss and thereby assist in revealing the effectiveness of your protective devices. The audiograms will reveal whether or not earplugs are being worn even in more moderate noise level areas.

By courtesy of American Association of Industrial Nurses "Journal." Picture by courtesy of Boeing Airplane Co.

Self-Sticking Markers Cut Maintenance Time and Costs



Self-Sticking Markers which cut maintenance time and costs are available from the W. H. Brady Co., Milwaukee. One of their widely-used products, ALL-TEMPERATURE PIPE MARKERS, stick permanently to pipes as hot as 300°F. Millions of them in use in plants of all types today. They conform to ASA standards and give you a fool-proof, cost-cutting method of pipe identification. Write for Bulletin No. 135-B.

Brady Self-Sticking DOTTED LINE AISLE MARKERS offer a fast, low-cost way to mark aisles. They are so tough they outwear painted lines 5 to 1. Miles and miles of aisles are marked with these markers in plants everywhere. Write for Bulletin No. 141.

A quick, economical method for marking areas, bays, posts, bins, pallets, etc., is found in Brady Self-Sticking All-Purpose NUMBERS and LETTERS. These individual NUMBERS and LETTERS let you make up any combination of markings right on the spot. Stocked in six sizes, these handy Markers fit many plantwide Marking needs perfectly. Write for Bulletin No. 165.

Manufacturer: W. H. Brady Co., 741 W. Glendale, Milwaukee 12, Wis.
(For details, use Key # H-16 on card on page 71)

Temporary Disabilities

Part II

by **ESTHER F. RAMSEY, R.N.,** Industrial Nurse
Sinclair Refining Co., East Chicago, Ind.

The Industrial Nurse

We are coming to the belief that there is a dual advantage to industry and to the employee in a program for home contact with the medical absentee. We feel that this program should definitely be administered by the medical department with trained personnel making the contact.

1. It gives the patient possible additional advice regarding his condition.
2. If properly handled by an individual really interested in this type work, it promotes a far better relationship between employer and employee.
3. It promotes an even greater opportunity for case finding.
4. It points up frequency and severity of medical absences of various employees.
5. It prevents exploitation of the sick plan.

There are some industries whose administrative policies recognize the advantage of a home visit program but do not understand that the program can be far more saitsfactory and profitable if the visits are made by a nurse. Certainly the patient feels more secure and less as though he were being pursued by the truant officer when a nurse comes to visit during his illness, rather than some member of the organization who has no medical knowledge.

True, such a visitor can ascertain that the patient is at home and definitely under medical care, but there is a feeling of resentment and antagonism which can develop from a visit by non-medical personnel.

A nurse, on the other hand cannot only ascertain the facts of true medical disability but can actually assist the patient by advice for simple treatment, checking such symptoms as temperature elevation, etc. She can use the facilities of local agencies such as Public Health and Red Cross to the advantage of the patient. She can establish contact with the patient's physician which is most helpful in the treatment and rehabilitation of the employee suffering from a long debilitating disease.

Case Load and Amount of Nursing

If a nurse is working with a well functioning Medical Home Visit Service, she should check the service from time to time for case load. We might well establish what is considered a satisfactory case load for a visiting nurse and what her territory should comprise.

Further in evaluating a Home Visit Program we should establish rather definitely the extent of nursing to be done by the visiting nurse at the time of her visit. In the case of acute emergency there is no question that we would certainly extend our services beyond the call of duty—but for the most part such simple nursing services as are expedient for good service to the patient are all that should be necessary.

Absentee Records: What of our absentee records? Do we keep a systematic, permanent account of every medical absence of every employee?

Even in the face of the fact that the book work and record keeping are becoming quite burdensome to the administration of the department, the service will only be as good as its records. It is only through these records that we can promote coordination between the medical service and the other industrial relations services. The personnel of the services will not necessarily see the patient, particularly while he is ill. But if we can provide some information from our complete records of the case, the outcome should be profitable to interdepartmental relationship. The employment and placement service, the safety department and the supervision and training departments may call from time to time for information regarding employees.

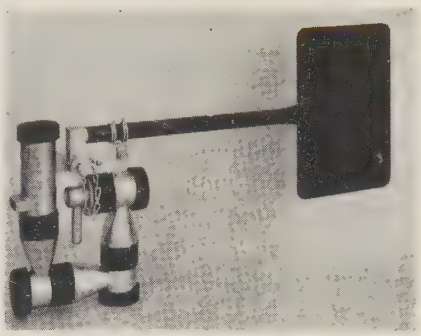
Further, along the lines of record keeping we should endeavor to make a survey of medical absenteeism in the plant. We might consider a breakdown of the types of disease or frequency by department—or similar checks on a monthly or annual basis.

The problem is probably not one of willingness to provide the various services to the organization, but one of convincing the organization that the service is worthwhile. Advancing and promoting the medical service may mean that we must settle to reorganizing the entire program as it now exists.

It probably will mean that we must convince management that such a program will require increase in personnel or even enlargement of the quarters. Here we become salesmen for better medical service. Try to take the time to prepare an evaluation of your present contribution and the benefits of the additional service you are recommending. We can only give the service we are permitted to give so let us continue our constant endeavor to improve this service from day to day by including such programs as the control of temporary disability in the plant.

From an address presented at the 40th National Safety Congress.

KEEPING UP WITH...



AIR-BORNE DUST SAMPLER

AN AIR sampling device for the discriminatory collection of large as well as small air-borne particles, either liquid or solid, is available from Mine Safety Appliances Co. The "Cascade Impactor" employs low air velocities to enable the larger particles to be correctly sampled. Four jets are arranged in series, each with an orifice smaller than the preceding one. The air velocity therefore increases from jet to jet and the efficiency of collection increases from slide to slide.

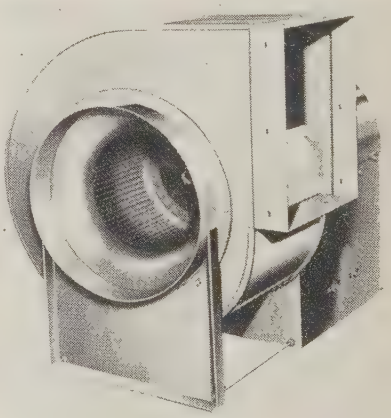
The four microscope slides on which the particles are impacted can be coated with a suitable collecting medium according to the type of aersol sampled. The four-chamber design provides size grading which assists in assessments of the sample. The four stages are demountable for easy cleaning and also for separate use if desired.

For details, use Key # DF-1 on Inquiry Card on page 71.

PAINT SPRAY FILTERS

TO REDUCE fire hazards and to simplify and cut the maintenance costs of paint spray booths and exhaust systems, Research Products Corp. has developed filtering panels that collect paint overspray and prevent paint build-up in the exhaust system. Called "Paint Arrestors," the equipment consists of a bank of frames for holding the filter panels. The frames are installed ahead of the exhaust fan in either booths or down-draft exhaust systems. The 20x20x1 inch filter panels can be replaced when the amount of paint overspray lowers the air flow. They are currently in use in systems ranging from 300 to 112,000 cfm capacity.

For details, use Key # DF-2 on Inquiry Card on page 71.



EXHAUST FAN LINE

A NEW, complete line of utility fans, announced by The Trane Company, has high NAFM certified ratings over its entire range of sizes, following a three-year research and testing program. The completely assembled ready-to-install fan units are available with either direct drive or belt drive, and either forward-curved or backwardly-inclined blades. They include all standard

DUST & FUME CONTROL SERIES
other articles in June and July

NAFM sizes between 4½" and 30" wheel diameter; capacities up to 15,450 CFM and static pressures up to two inches of water are available.

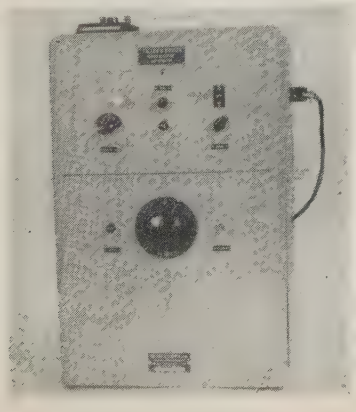
Other features are low outlet velocity, low noise level, versatility, low maintenance, lockseam housing, and overhanging sheave adjustable drives. This last feature permits fan belts to be replaced without disassembly, reassembly and realignment of the fan.

For special applications, these fans are available in special metals, in spark-resistant construction, and with special coatings and finishes. Requiring only electrical and duct connections, these units are suitable for exhausting air from fume hoods, pickling and electro-plating tanks, oven rooms, inside offices, lavatories, kitchens, locker rooms, etc.

For details, use Key # DF-3 on Inquiry Card on page 71.

SENSITIVE GAS DETECTOR

ACCURATE DETECTION of toxic or combustible gases in extremely low concentrations is claimed for the "Supersensitive Gas Detector" by Taller & Cooper, Inc. Capable of indicating gas concentrations as low as five parts per billion, the unit uses the principle of detection of mercury vapor in ultra-violet light. It can be used for laboratory analysis or continuous monitoring of industrial areas.

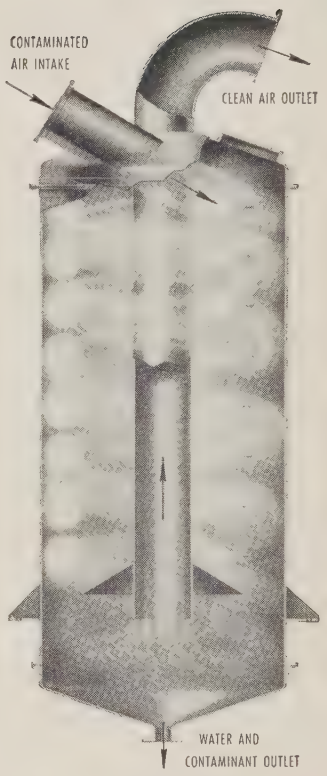


The upper portion of the equipment is detachable and can be used as a mercury vapor detector and for quantitative measurement of ultra-violet absorbing materials such as benzene, toluene, ethanol, methanol, gasoline, aromatic hydrocarbons, alcohols, or water vapor. The complete instrument provides sensitive quantitative detection of reducing or combustible materials such as carbon monoxide, hydrogen, ethylene, acetylene, formaldehyde, hydrogen, sulfide, acrolein, saturated hydrocarbons, lower aldehydes, methane, ethane, propane, water vapor, or oxygen in inert gas.

For details, use Key # DF-4 on Inquiry Card on page 71.

FOG FILTER

A HIGH pressure fog method of dust and fume collection has been developed by The R. C. Mahon Co. as a new tool for both internal and external air pollution problems. It is specifically designed for contaminants of less than 10 microns; and is also capable of handling high temperature fumes without fire or explosion hazard. The filtering fog is released through spray nozzles at 300 to 500 lbs. pressure. Less water is required than in low pressure scrubbing towers, and the fog is also able to effect a certain amount of deodorization.

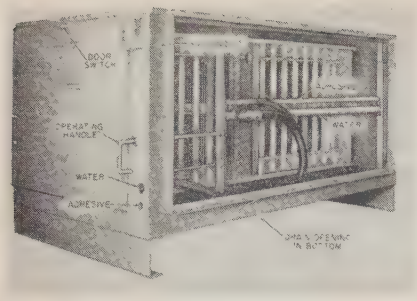


FOG-FILTER

Capable of handling high temperature fumes. Noncorrosive materials are employed in manufacture when active corrosive gases or fumes are dealt with.

As shown in the picture, the contaminated air enters the collector through the inlet at the upper left. Fog nozzles arranged around the outside of the container and set at a slight angle force the air to spiral downward. The water and contaminants are drained out at the bottom, while the cleaned air rises through the center duct and the curved outlet at the top.

For details, use Key # DF-5 on Inquiry Card on page 71.



COMPACT ELECTRONIC AIR CLEANERS

RECOGNIZING that clean air requirements are just as stringent for small spaces as for steel mills and large buildings, Westinghouse has produced a new line of packaged PRECIPITRON Electronic Air Cleaners specifically for the smaller jobs.

Known as Precipitron cabinet units, they incorporate the same dependable features previously available in larger, more expensive sizes. Air cleaning efficiency is over 90% by recognized soilability tests. Features are: reduced space requirements (only 38" in direction of airflow) and the latest improvements to simplify maintenance. Units come equipped with built-in movable nozzle systems for washing away dirt accumulations and spraying soluble dust-holding adhesive on the working elements. Both washing and adhesive spraying cycles are controlled and operated from outside the unit.

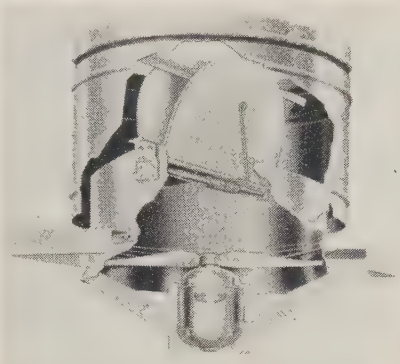
Built in sizes from 200 to 10640 cfm, these units are for use with air handling and self-contained air conditioning units. They are particularly suited for offices, laboratories, hospitals, precision assembly rooms and similar applications where the need for the cleanest possible air is paramount. They are equally applicable to industrial process requirements.

For details, use Key # DF-6 on Inquiry Card on page 71.

EMERGENCY DAMPER OPENER

A NEW thermally actuated, emergency damper opener for its Sky-Blast power roof ventilators has been introduced by the Propellair Div., Robbins & Myers, Inc. The unit allows the roof ventilator to serve as a venting device for smoke, heat and fumes in the event of fire.

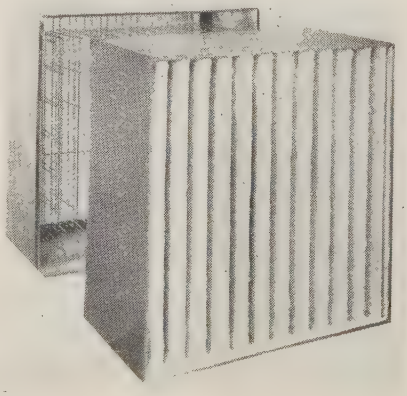
Consisting of twin high-torsion alloy steel springs mounted on a telescoping steel tube support, the device is completely independent of electrical equipment which might be damaged by fire or water. The two steel spring arms are held in place by a fusible link which breaks when the pre-selected critical temperature is reached. These arms immediately open the dampers and function independently of fan operation. Available in two sizes for roof ventilators from 24 to 60 inches in diameter and in a wide range of temperature ratings. The device can be installed on roof ventilators already in service.



For details, use Key # DF-7 on Inquiry Card on page 71.

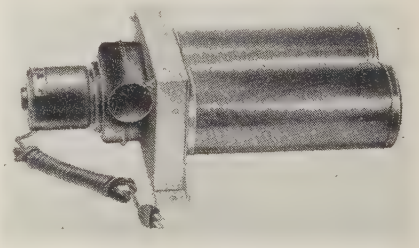
AIR CLEANING FILTER

A NEW FILTER designed to provide high efficiency filtering with a low pressure drop for commercial and industrial ventilating and air conditioning systems has been announced by Cambridge Filter Corp. The new Aerosolve Filter was developed for application in chemical, pharmaceutical, food processing, optical, photographic, electronic, metal working and other industries where clean air is essential, and in situations where a high percentage of dusts or fumes must be kept from escaping.



The new device consists of a permanent, cadmium-plated steel frame, which contains a completely assembled, easily replaceable filter cartridge. Three interchangeable cartridges are available, providing efficiencies of 95, 85, or 35 percent. No maintenance is required except infrequent cartridge replacement by simply removing a specially designed, quick-acting fastener at each corner. They utilize special glass fiber mats whose deep-pleated design provides a large filtering area. The new filter is fire resistant and extremely flexible in it application. Overall dimensions of the frame for the standard 1,000 cfm filter are 24 by 12 inches. Smaller capacities down to 125 cfm also available.

For details, use Key # DF-8 on Inquiry Card on page 71.



GAS & VAPOR SAMPLER

A PORTABLE air sampler, suitable for air pollution tests, is available from W. B. Connor Engineering Corp. The small unit, which is 18 inches long, circulates air through a bed of activated carbon at the rate of 50 cubic feet per minute. The carbon extracts and holds any gases or vapors the air may contain. Laboratory analysis of the carbon identifies the airborne contaminants and their concentrations.

For details, use Key # DF-9 on Inquiry Card on page 71.

AIR LINE HAND VACUUM

IT'S NOW POSSIBLE to convert any air line into a powerful vacuum cleaner for either wet or dry pick-up with the Bennett Industrial Air-Operated Cleaner, available from M-M-A, Inc.

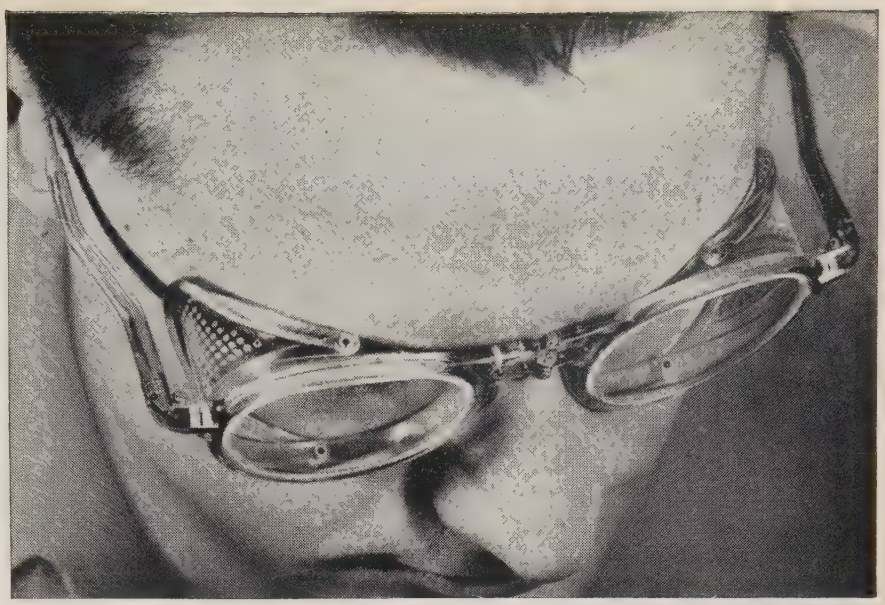
The unit picks up the particles of lint, waste, hair, filings, lathe cuttings, etc. and deposits them into an easily emptied container. Or, it can be connected to larger waste collecting installations, drums, etc. It can also be used for wet pick-up and will empty a 50-gallon drum of water in about 60 seconds.

The absence of electrical parts and its non-ferrous construction eliminate the chance of sparks and the danger of fire in operations where combustibles are handled. A convenient standard valve arrangement with trigger can be used as wanted, or the unit can be set to produce a steady vacuum for installations on grinders, belt sanders, etc. Weighing less than 1½ pounds, it is easy to handle and has no moving parts.

For details, use Key # DF-10 on Inquiry Card on page 71.

HEAVY-DUTY DUST CLEANER

A PORTABLE vacuum cleaning unit for heavy-duty industrial operation is available from U. S. Hoffman Machinery Corp. The HOFFCO-VAC No. 35 is especially designed for continuous work in areas with heavy



What a big difference in *comfort* the HINGED BRIDGE makes!

Your workers will say they never had comfort like they get in the new Willson Contour-Spec—and its new hinged bridge adds an extra measure of protection, too!

It's the *hinge* that permits equal pressure at every point of contact with the face . . . snug comfort regardless of facial contour! And it's the hinged bridge that means extra safety because there are no dangerous gaps around the eyes.

Contour-Specs conform to *any* face—heavy, lean, round, long or bony! Result is, a new concept of comfort combined with protection that encourages workers to wear them willingly.

Let them try Contour-Specs—see how well the 47-mm. lenses suit every eye size—feel how easily the lightweight, snug-fitting Butyrate plastic frame "sits" without pressure anywhere. Order a supply from your Willson distributor now.

NEW *Contour-Spec*®

SAFETY SPECTACLES BY . . .

Design Patent 168988

More than 300 Safety Products Carry This Famous Trademark

WILLSON®

Leaders in Research and Development of Safety Equipment Since 1870

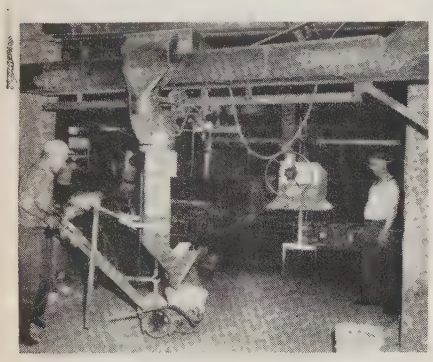
207 WASHINGTON ST., READING, PA.

(For details, use Key # H-17 on card on page 71)

dust deposits. The powerful vacuum provides a suction of 6.5" of mercury to operate through a single 1½" hose of from 25 to 75 feet in length, or two hoses 50 feet long.

The unit is so maneuverable that it can turn on its own length. It has rubber tires, roller bearing wheels, a castered dust container, nine tubular dust filtering bags, tool box, hose rack and electric cord saddle. The multi-stage exhauster is powered by a 5 HP motor.

For details, use Key # DF-11 on Inquiry Card on page 71.



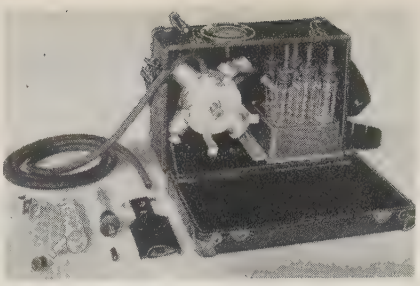
FUME CONTROL SYSTEM

A PATENTED fume control system for toxic, as well as non-toxic fumes, has been developed by Martin Equipment Co. Originally designed for ventilating in non-ferrous foundries, the system is applicable to other foundries and to other industries with dust and fume problems.

The "Hawley System" consists of a cylindrical or rectangular sheet metal hood suspended from a non-flammable flexible duct. The height of the hood is adjusted so that it is directly above the ladle or crucible being used to pour molten metal into molds along a pouring line, or directly above other process or work giving off fumes.

The flexible duct is suspended from a mobile transition box which runs on a track mounted on top of an exhaust duct. Fumes drawn into system enter exhaust duct at whatever point mobile transition box happens to be at the moment. The system is said to reduce health hazards and to reduce plant heat loss in cold seasons, since it operates with only 2500 c.f.m. of air.

For details, use Key # DF-12 on Inquiry Card on page 71.



PORTABLE DUST IMPINGER

A HAND-OPERATED portable dust impinger that is light in weight and compact is available from Mine Safety Appliances Co. The unit samples at the rate of one-tenth of a cubic foot per minute by means a hand pump with a vacuum regulator to maintain a steady flow.

The portable "Midget Impinger," which includes nine calibrated glass sampling tubes, permits dust sampling or surveys in isolated areas, confined spaces, or locations that lack electricity or compressed air. Available also with all-glass impinger flasks with nozzle or fritted glass bubbler for the sampling of many gases and vapors as well as dusts.

For details, use Key # DF-13 on Inquiry Card on page 71.

HAZARDOUS LOCATION VACUUMS

TWO NEW and lower cost commercial vacuum cleaners, one portable (Model P-118) and one stationary (Model SB-118), have been announced by The Spencer Turbine Co. Both are applicable for use in hazardous locations as they are available at slight extra cost with a ⅞ H.P. explosion-proof motor. Model SB-118, for example, offers to such locations as a grain elevator, or when fumes are a hazard, a safe stationary vacuum cleaning system whose explosion-proof motor includes an enclosed switch and is Underwriters approved for hazards in Class I Group D or Class II Groups E, F and G.

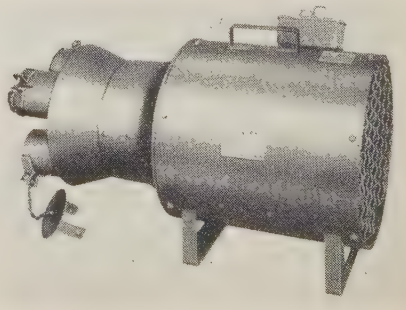
With Model P-118, the dirt can is easily removable with a handy foot release. It also features an enclosed dirt bag which is shaken out *inside the machine*, completely eliminating the spreading of dust and germs. The portable unit has ball bearing equipped rubber-tired wheels for smooth and silent movement and carefully engineered spacing of the wheels and back caster for maximum stability. It may be used for wet or dry pick-up, and where large quantities of water are to be collected, a separate galvanized wet tank is available.

For details, use Key # DF-14 on Inquiry Card on page 71.

MULTIPLE BLOWER

A NEWLY designed blower wheel, powered by a heavy duty ¾ h.p. totally enclosed ball-bearing motor, makes the Chelsea Type OPJ 'Octopus Junior' exhauster and blower a flexible and powerful unit to control dust, fumes, smoke and gas in a wide variety of industrial plant operations.

Ventilation for one or several remote or confined spaces is provided by this portable unit that can be placed or hung in any convenient location between the working area and fresh air, then connected with flexible hose to areas needing ventilation. The unit will operate in any position, and can be converted



from an exhauster to a fresh air supplier simply by changing the position of the nozzle adapter.

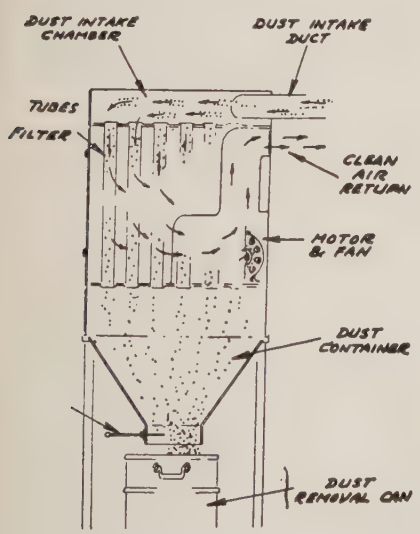
With the newly designed blower wheel, it will deliver up to 1350 CFM of fresh air through a single outlet, or 155 CFM through four separate 50′ lengths of flexible hose. It can be used effectively as an exhauster for welding areas, maintenance shops, garages, around groups of machines or process tanks, inside of tanks, chambers or large vessels, and in a variety of other ways for dust and fume control. Because of its light weight, it can be used by repair crews that move from job to job. Made by Chelsea Fan & Blower Co., Inc.

For details, use Key # DF-15 on Inquiry Card on page 71.

SELF-CONTAINED DUST UNIT

A COMPLETELY self-contained dust control unit that permits either recirculation of the cleaned air within the working area or exhausting of the air to the outside is offered by the Surty Mfg. Co. The unit can be equipped with wheels and moved to any place where needed and can be used to collect dust from one or several machines.

Dust is drawn into the intake chamber, is caught by the filter tubes, and drops into the removal



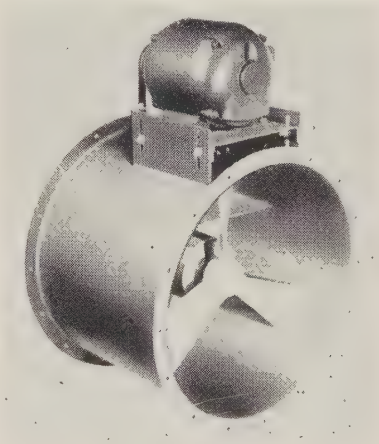
can. The frequency of cleaning the tubes and emptying the can will depend on the type of dust and extent of use.

For details, use Key # DF-16 on Inquiry Card on page 71.

TUBE-AXIAL FANS

A NEW LINE of belt-driven tube-axial propeller fans designed for handling corrosive exhaust, high temperature, explosive fumes and similar difficult air-moving applications is being introduced by Propellair Div., Robbins & Myers, Inc. Available in five sizes from 16 through 36 inches, the new fans have air delivery ratings to 26,000 cubic feet per minute.

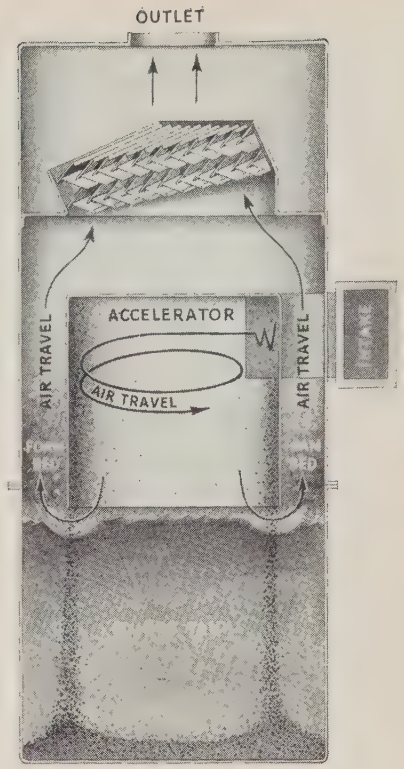
Designated as Type BT, the fan drum is rolled from 12-gauge steel plate. Integrally rolled mounting flanges and a continuous welded seam eliminate fume or condensate leakage and subsequent corrosion. Gas-tight welds prevent leakage in the belt housing. The motor-mount will accommodate any motor from ¼ to 5 horsepower, 1725 rpm, mak-



ing motor changes both practical and simple. The V-belts are resistant to high temperature, oil-proof and static-free.

Propellers are cast from a special aluminum-magnesium alloy which provides extremely high tensile and shock strength and greater corrosion resistance to mild alkalis. A rigid, one-piece cast-iron housing isolates the fan bearings from the polluted air stream. Three bearing assembly designs are available: totally-enclosed, ventilated (for high temperature requirements) and corrosion resistant.

For details, use Key # DF-17 on Inquiry Card on page 71.



HYDRO-FOAM COLLECTOR

The level of the water in the sludge tank and the depth and density of the foam bed above are maintained constant by an automatic metering device.

WET-FOAM DUST COLLECTOR

AN EFFECTIVE and economical means of eliminating contaminant dust particles exceeding 10 microns is claimed by The R. C. Mahon Co. for its Hydro-Foam Dust Collectors. They are available in standard units ranging from 3000 to 12,000 cfm and can be manifolded together in batteries of two, three or four to a common sludge tank. As shown in the drawing, the dust-laden air is forced down through the center cylinder and the particles are screened out as the air rises through the foam bed.

For details, use Key # DF-18 on Inquiry Card on page 71.

Correction

THROUGH A printer's error in the July issue of SAFETY MAINTENANCE, it was implied that the Genesee Valley Safety Conference had been held in Rochester, N. Y., in May of this year. The conference is announced for May 22, 23, and 24 of next year, 1956.

For overhead maintenance — up to 14 feet

SAFETY DIRECTORS like these mobile ladder-trucks because the automatic safety control locks truck—makes it a stable work platform—with 4-way guard rail protection for operator.

OPERATORS like Safe-Lad because all tools and equipment are always handy in the base tray—and they always feel secure and comfortable.

MANAGERS like Safe-Lad because it reduces overhead maintenance costs—in some cases by as much as 50%.

For complete specifications, write—

SAFE-LAD
Manufacturing Company

1003 S. E. Morrison • Portland 14, Oregon

(Use Key # H-18 on Inquiry Card on page 71)

How to Clean Marble

(Continued from page 23)

sometimes be removed by using this type of cleaner on a wet sponge preceded and followed by washing with a specific solution usually contained with the cleaner.

On flat surfaces such a cleaner can be sprinkled lightly over the stain and water added. Do not leave in place over a half hour, reapplying if necessary. Polish is usually dulled by this treatment. Mixed with a poultice the cleaner can be made into a paste with water. The poultice made in this fashion can be left in place until it is dry before removal.

Tobacco stains can be removed by bleaching as you would organic stains. Urinal stains can be removed with poultices of marble detergent and peroxide bleach. For iodine stains apply a poultice of whiting and alcohol. In the case of ink stains much depends on the kind of ink that made the stain. Ammonia-saturated cloths, crystal cleaner poultices, or alternate alcohol-ammonia wettings are all suitable for various kinds of ink.

Superficial smoke stains can usually be removed by thoroughly washing and scrubbing with an abrasive cleaner. Lead stains in the presence of cement and salts will impart yellow-orange stains to marble. Usually these stains are a great distance from the joint and at the point where the lead-alkaline solutions evaporate at the surface of the stone. The only way to remove these stains is to saw out the lead. Eventually the stain will disappear. Flashings of lead should not be buried in cement joints where water is apt to lodge.

Paint should be removed as soon as possible from marble to limit the entry of linseed oil. Remove the surface paint with a razor blade or knife. There are 2 ways to proceed: either, apply a poultice made with benzol covering an area larger than the stain, remove when dry and bleach remaining color with peroxide poultices; or, apply liquid or paste varnish and paint remover over stained area, remove with cloths after a short period, scrub with a fibre brush and marble detergent, then bleach out remaining color with a peroxide poultice or solvent poultice for oil stain.

Deepseated fire stains require poulticing with alternate treatments of solvent cleaner and peroxide bleach. Lipstick stains are a combination of color and wax-like materials. Abrasion or bleaching will remove the color. The wax-like part, which is difficult to see except when the stone is wet, and which then appears as a white mark, can sometimes be removed with poultices of alcohol.

Copper and bronze stains are usually the result of run-off from oxidized plaques (contest winners beware!). They are usually muddy brown and green. It is useless to try to remove them until the source has been cleaned and protectively coated to prevent oxidation. These stains can sometimes be removed by mixing together in dry form one part of ammonium chloride (Sal Ammoniac) and 4 parts powdered talc or whiting. Add ammonia water and stir until a thick poultice is obtained. Place over stain and leave until dry.

Linseed oil stains come from an unwise use of oil paints or oily mastics and putty near or in conjunction with marble. If they become oxidized they will be difficult to remove. If putty or mastic is the cause remove from joints and then apply an oil-solvent cleaner to the marble followed by peroxide poultices to remove any color.

Spots of tar should be quickly removed with a razor blade or knife. Carefully wash the spot with a cloth dampened with white gasoline. Apply a poultice made with white gasoline over the area. Remove and wash thoroughly. Success in removing crayon stains will depend on what kind of crayon was used. Remove surface color by scrubbing or abrasion. Apply poultices of oil solvent cleaner to spots.

If marble is cleaned regularly and properly, and if any stains which appear are attacked immediately, it should retain its beautiful appearance almost indefinitely.

From "Marble Cleaning Methods and Materials" by the Vermont Marble Co.

Agriculture Needs Industry's Safety

FARMING TODAY perhaps presents more occupational hazards than any other industry," says Dr. A. L. Schultz in the Journal of the National Chiropractic Association. "In fact, records show the farmer has the highest rate of industrial injuries. He has left the horse and buggy era, and has now grown, with the aid of modern machinery, into the class of heavy industry."

Pointing out that it is not alone the use of machinery but also chemicals which provide new hazards, Dr. Schultz states "the farmer must also be a chemist and know about the detrimental effects of the sprays and chemicals that he uses on weeds, his livestock and seeds. These substances have a damaging effect upon his own system, particularly the skin, mucous membranes and lungs."

The doctor recommends that farmers adopt the same preventative measures as have become standard in big industry. When the farmer must use sprays, he should wear gloves, keep his shirt sleeves rolled down, and wear a mask to protect the lungs from chemical vapors. Using hard topped hats, as in the oil industry, should be adopted as a preventive measure on the farm.

"Headlines reading 'Farmer Killed In Fall From Windmill' and similar accidents," says Dr. Schultz, "indicate farmers should own and use safety belts such as are mandatory for telephone and power company linemen. These should be used when they repair windmills or have to climb other high objects on the farm. Like most railroad men they should wear shoes with steel toecaps to prevent the many toe injuries."

Agriculture, a big business, is made up of small units and therefore a "safety first" program on an organized basis is difficult. Dr. Schultz recommends that farmers call group meetings several times a year to discuss safety first measures.

THOSE IN THE KNOW
. . . PREFER
Install K-LENS-M Lens Cleaning and Anti Fogging Stations for clean, clear vision . . . for all types of safety eyewear, glass or plastic.
More Efficient—Lower Cost
Send company letterhead for FREE sample and complete information.
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The Acknowledged Leader in the Lens Cleaning Field
The WILKINS Co., Inc.
Cortland 2, N. Y.
(For details, use Key # H-19 on card on page 71)

President's Conference

PRESIDENT EISENHOWER will open the next President's Conference on Occupational Safety, which is scheduled to be held in Washington on May 14–16, 1956, the United States Department of Labor has announced.

Held biennially, this Conference brings together leaders of American business, labor, Federal and State officials, insurance, education, and private safety organizations to devise cooperative means of further reducing occupational injuries.

The industries of primary concern to the Conference include construction, manufacturing, utilities, finance, trade, service and government. Steady declines in the injury frequency rate for manufacturing have been recorded for the past three years, reaching a new all-time low of 11.5 injuries per million manhours worked in 1954.

Learning..... the hard way

DEAD DRUNK . . .

IS A COMMON expression often used in jest . . . but with wood alcohol as the intoxicant it can often be deadly true. Wood alcohol affects the nerves of the eyes, sometimes causing total blindness. Other symptoms are irritation of the nose and throat, headache, drowsiness, chills, irregular heart action, etc.

Occupations in which workers may be exposed include the manufacture of artificial flowers, felt hats, rubber, shellac and varnish, explosives, boots and shoes, antifreeze, linoleum and artificial silk and leather, to name a few.

While handling wood alcohol may cause local inflammation and some absorption through the skin, the principal danger lies in inhalation of fumes. The poison may, of course, be taken in large amounts, and result in fatal intoxication but in most cases the damage is done by breathing small amounts over a period of time, resulting in an accumulation in the body tissues. Extent of injury, therefore, depends on how soon the exposure is detected and controlled.

Processes using wood alcohol should be isolated. Local exhaust should remove fumes at the point of origin. Inspection of ventilating equipment should be regular and thorough. Standard tests should be made for concentrations of fumes in the air. Some authorities feel that more than 100 parts, per million parts of air, tends to become unsafe. It is in the cumulative effects of this poison that much of its danger lies.

For maximum protection, any operation that involves the use of wood alcohol should be investigated carefully.

YOU WON'T MELT . . .

IN THE YARD of a pump operating plant two buried gasoline tanks were used to test a submerged type of gasoline pump. During a routine test it began to rain. The testing crew pulled the pump out of the tank and went inside the plant. They forgot to replace the cover on the tank opening before they left.

The rainstorm developed into a cloudburst, and the surface water ran into the tank sending the gasoline overflowing down the driveway and into the street. Sewers were clogged and the streets became flooded. A local bus made a stop in the area. When it started up, the gasoline on the water ignited. Fortunately all the passengers on the bus escaped injury, although the bus was badly damaged. The fire was so intense that numbers of windows in the plant were broken and one sprinkler head on the first floor opened. A section of brick wall had to be replaced because it was so badly damaged by the intense heat.

All this could have been avoided, if the men testing the gasoline pump had not been so anxious to escape the rain that they forgot the duties of safety. There is no guard or rule to force a man to act coolly in a situation. The best we can do is to familiarize him with his job and its safety precautions, and train him as best we can by discussing most of the possible situations that can come up before they happen.

Audiometric Guide

To provide assistance in the medical control phase of the industrial noise problem, a "Guide for Industrial Audiometric Technicians" has recently been published. The manual is the result of extensive experience in conducting training programs for hearing specialists. Subjects covered include: physics of sound, anatomy and physiology of the ear, the audiometer, care and maintenance of audiometers, techniques of measuring hearing, standard procedure, records and forms, plan for audiometric testing room, and an outline of an audiometry training program. Copies of the guide are available free from: Employers Mutuals of Wausau, Wausau, Wisc.

Problems of Workmen's Compensation

The proceedings of the 1954 Convention of the International Association of Industrial Accident Boards and Commissions are now available from the U. S. Department of Labor's Bureau of Labor Standards as its Bulletin 180, "Workmen's Compensation Problems." In addition to the Committee reports and discussions, this bulletin includes many excellent papers by prominent workmen's compensation officials and outstanding medical men. Panels on "Adequacy of Workmen's Compensation," "Rehabilitation of Injured Workers," Noise in Industry," and "Principles and Methods of Expediting Hearings and Settlement of Claims in Contested Cases" were among the topics considered at this convention. An address by Under Secretary of Labor Arthur Larson on "The Future of Workmen's Compensation" is also included.

A limited free supply of this publication is available from the Bureau of Labor Standards, U. S. Department of Labor, Washington 25, D. C. Sales copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 65 cents each.

What Causes Accidents?

Human behavior is responsible for 70 to 80 percent of industrial accidents, according to a report published by New York University's Center for Safety Education.

John C. Larson, research associate at the Center and author of the report, says that although much is known about the relationships of safety engineering, diseases, disorders, and physical working conditions to accidents and injuries, "statistics indicate that these factors account for only 20 to 30 percent of industrial mishaps." He adds that human behavior "apparently accounts for the remainder."

The study, entitled "The Human Element and Industrial Accident Prevention," shows that such factors as personality characteristics, adjustment to a new job, rejection by coworkers, excessive fatigue, low morale, a tendency to be overly critical of the job, and lack of promotions are high among the causes of accidents.

"Although a physical working environment contributes to accidents," the NYU safety researcher explains,

TORIT
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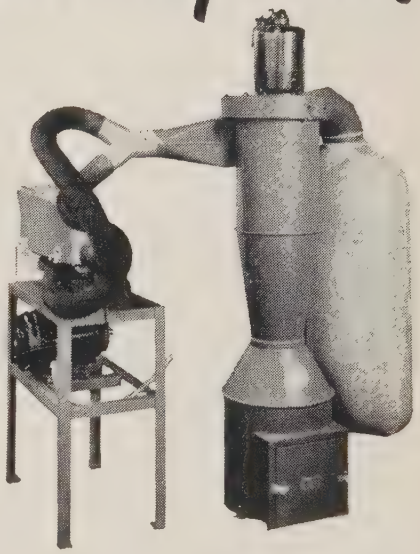
Really draw!



A size and model to solve any dust collecting problem, Torit collectors provide complete, all-around dust control. Torit collectors are unitized for custom installation on each machine, giving power and suction only when machine is operating. Keeps plant and machines free from clogging and unsightly dust. Furthermore, cleaned and filtered air is exhausted back *into* the room maintaining heat balance. Find out now how Torit unitized dust control is engineered to your problems.

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(Use Key # H-20 on Inquiry Card on page 71)

"the social and psychological climate does so to an even greater degree. Financial considerations are more tangible than prestige, but responsibility promotion possibilities, and other factors of morale and job satisfaction tend to assume greater importance in the minds of workers."

The report contains summaries and interpretations of more than 200 studies which were screened from 500 abstracts of research projects. Much of the material originally appeared in safety studies in medical, psychiatric, opthalmological, optometric, psychophysical, psychological, and sociological journals, texts, and periodicals.

The safety study contains sections on hiring procedures, orientation, training supervisors and foremen, training workers, morale, job satisfaction, and predicting accidents. It also includes a critique of industrial accident research, an extensive bibliography, four appendices, and a glossary of technical terms.

Prepared by Mr. Larson with the assistance of four other researchers, the study is intended as a guide and reference work for safety engineers, personnel directors, researchers, training directors, industrial psychologists, safety supervisors, college and university instructors, and industrial physicians.

Single copies of the report are available for $2.00 and there are special rates for quantity orders. Further information about the report may be obtained from the Center for Safety Education, Division of General Education, New York University, 6 Washington Square North, New York 3, New York.

Directory of Testing Laboratories

NATIONAL BUREAU of Standards Miscellaneous Publication M187, *"Directory of Commercial and College Laboratories,"* has been withdrawn from circulation. An up-to-date revision of this publication is now available in the *"Directory of Commercial and College Testing Laboratories,"* recently issued by the American Society for Testing Materials. The two organizations have agreed that ASTM undertake the responsibility for compilation and publication of the Directory in the future.

The Directory gives information regarding the location of testing laboratories together with the types of commodities and the nature of the investigations the laboratories are prepared to undertake. It is designed to be of assistance to the large number of purchasers who are not equipped to make their own acceptance tests and who therefore have hesitated to buy on specifications. It should also be of value to small manufacturers and others who are seeking testing laboratory services in the evaluation of raw materials and finished products.

The new Directory may be obtained from the American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pennsylvania, at $1.00 a copy.

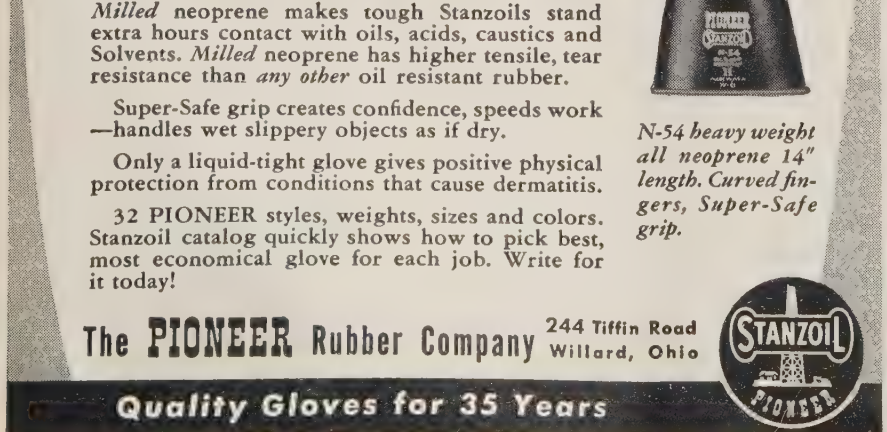
Hiring the Handicapped

A PROPOSAL FOR employers to eliminate remaining barriers to the employment of people with physical handicaps has been made by the National Association of Manufacturers.

The proposal was made in a new "Guide for Employers in Hiring the Physically Handicapped," which was prepared by a committee of industrialists in response to the expressed wishes of employers. The 32-page guide describes step-by-step procedures which industry has found successful in matching handicapped workers to jobs which they can do as well as able-bodied persons.

The handbook contains detailed suggestions covering company policy; recruiting, interviewing and placing of job applicants; the training of employees; and follow-up procedures to assure satisfactory job performance, safety, and a feeling of well-being on the part of the new employee.

The NAM publication stressed that production records covering thousands of handicapped persons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Milled neoprene makes tough Stanzoils stand extra hours contact with oils, acids, caustics and Solvents. Milled neoprene has higher tensile, tear resistance than any other oil resistant rubber.
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(For details, use Key # H-21 on card on page 71)

in industry indicate "beyond any question that so-called 'handicapped' workers are equal to and in some instances better than their able-bodied associates in such important factors as attendance, turnover, safety and productivity."

Copies of the guide are available from the National Association of Manufacturers, 2 East 48th St., New York 17, at 50 cents each.

Knife Grinding and Woodworking Manual

THE second edition of a book written by C. G. Monnett, Jr. has just been released to the general public. The book contains 167 pages and 187 pictures, charts, and drawings, and is thought to be the most complete book of its kind published in this country.

The following are some of the subjects covered by the "Knife Grinding and Woodworking Manual": Grinding Knives; Setting Knives; Moulder Operations; Wood Defects; Balancing Knives; Composition and Care of Grinding Wheels; Jointing Knives; Development, Selection and Care of Cutterheads and Knives; Cutting Angles and Bevels; Cutting Speed, Feed Speed, and Energy Consumption of Machining Wood; Moulder and Planer Machine Stoppages and Their Remedy; Structure of Wood; Lumber Abbreviations; Common Woodworking Pattern Names; Safety, and many other worthwhile subjects.

Copies of the manual may be obtained by writing to C. G. Monnett, Jr., Vice-President, Dependable Machine Company, Greensboro, N. C. Price of the book is $4.50 plus a $.50 postage and handling fee.

Two Safety Manuals

RECOGNIZING THAT its field workers are often faced with problems over and beyond those met with in the shops, Allis-Chalmers has issued for their use a 75-page pocket-size field service safety manual.

Included in the manual are tips on the proper use of hand and portable power tools; on good housekeeping, material handling, motor vehicle operation, fire prevention and extinguishment, fundamentals of good hitching; safe practices for carbon tetrachloride, dry ice, asbestos, sulfuric acid; preventive measures for control of or protection against dust; first aid principles, and the prevention of accidents in the field.

To help maintain a high standard of safety in the operation of its in-plant railroad system, the company has also adopted and placed in manual form a comprehensive outline of basic railroad practices.

As portrayed and described in the manual, these rules cover signaling, blocking, coupling and switching, movement of cars, loading operations, boarding, traveling and descending, maintenance, and bad order and breakdown rules. In addition, it carries special rules for railroad derrick crews.

Single copies of either manual are available on request from the Safety Services Department of Allis-Chalmers Manufacturing Company, Milwaukee 1, Wisconsin.

(Continued on page 68)

Safety and Special Purpose

Plain or Reflectorized

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SAFETY FIRST — BE — CAREFUL
NOTICE THESE DOORS MUST BE KEPT CLOSED
BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
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WARNING CURRENT —ON—
CAUTION KEEP AISLES CLEAR
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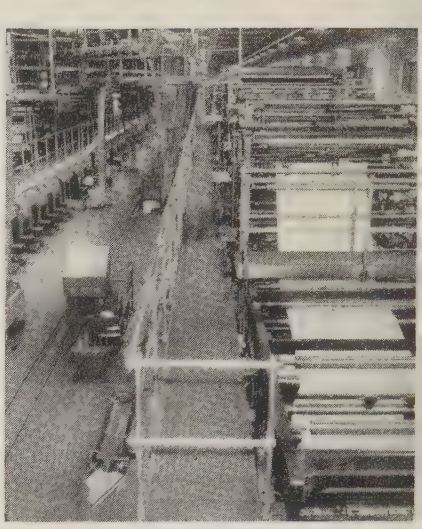
(For details, use Key # H-22 on card on page 71)

A SAFETY IDEA

THE PRESSROOMS of the new plant of *The Philadelphia Bulletin* have close to 26 thousand square feet of non-skid steelplate on all walking surfaces at the pressroom level, including walkways on the presses and along all conveyors; on transfer tables and on the floor of the huge freight elevator that serves the pressroom. The newspaper's goal is to make its new ultra-modern printing plant the safest operation of its kind in the world.



Non-skid metal flooring material is used throughout newspaper pressroom to provide safety for all employees.

The abrasive rolled steel floor plate is made by a process in which abrasive grain, the same type used in grinding wheels, is rolled as an integral part of the upper portion of steel floor plate, to make a strong, tough, skid-proof flooring. The plate is especially effective where ink mist, oil, grease or other liquids make walking hazardous.

Picture by courtesy of Alan Wood Steel Co.

If dunked in the drink . . .

THIS MAN WILL NOT SINK!

BOOM MEN at Weyerhaeuser Timber Company's Everett (Washington) lumber division are no happier about falling in their Snohomish river log pond than they ever were, but feel a lot more confident about floating than they did a month or so ago.

During wet, windy weather the men who jockey the big sticks around the pond wear bright yellow rain coats and pants, with built-in life preservers. Inside each jacket are 28 air tubes and lining the pants are 2 king-size tubes. The combination makes it literally impossible for a man to sink, no matter how big his shoes or how heavy his clothing.

"We have been looking for a long time for a way to make working on the pond safer," explains Keene Strobel, the Everett lumber division safety engineer. "But every sort of life preserver we tried proved bulky and awkward.

"By buying regular rain jackets and pants, and having a local firm make the life-saving lining to our specifications," claims Strobel, "we have come up with what seems to be the best answer yet to the potential danger of working on the pond."

Design of the new safety gear was the result of 6 months' trial on the pond by boom men. The inflatable air tubes are fastened to the inside of the rain clothing with snaps.

Life preserver equipment is also worn by boom men at the company's Springfield, Klamath Falls and Coos Bay branches in Oregon and at the White River branch at Enumclaw, Washington.

Bright yellow, heavy-duty, neoprene-covered canvas jacket and trousers on man in picture at upper left, keep him afloat if he should lose footing on a log in pond. At left he displays inflated plastic air tubes snapped inside jacket to superior.

Pictures by courtesy of Weyerhaeuser Timber Co.

SAFETY ACHIEVEMENTS

THE TRAILMOBILE TROPHY, A national award in the trucking industry for highway safety, was presented for the second year in a row to Pacific Intermountain Express, Oakland, Cal., during the annual meeting of the American Trucking Associations Council of Safety Supervisors. The Trophy was presented on the basis of the firm's outstanding highway safety record, driver selection and safety training programs, special safety equipment, records of assistance to motorists and voluntary highway courtesy and service programs.

• • •

DU PONT EMPLOYEES, NEARLY 90,000 of them, reduced their off-the-job injury frequency rate in 1954 by 20 percent from the preceding year, suffering an average of 5.05 time-losing injuries per million exposure hours while away from work, as compared with 6.35 in 1953. Both of these figures are substantially lower than the latest available all-industry on-the-job rate of 7.44 which, in turn, is generally conceded to be much lower than the over-all frequency rate for the general public. Du Pont began to tabulate off-the-job injuries in January, 1953. The early figures turned up two significant facts:

First, Du Pont employees had less injuries off the job than did the general public. This indicated that safety consciousness on the job tends to create safety consciousness off the job.

Second, Du Pont employees were far safer at work than away from work. This indicated the need for a program to improve safety performance off the job.

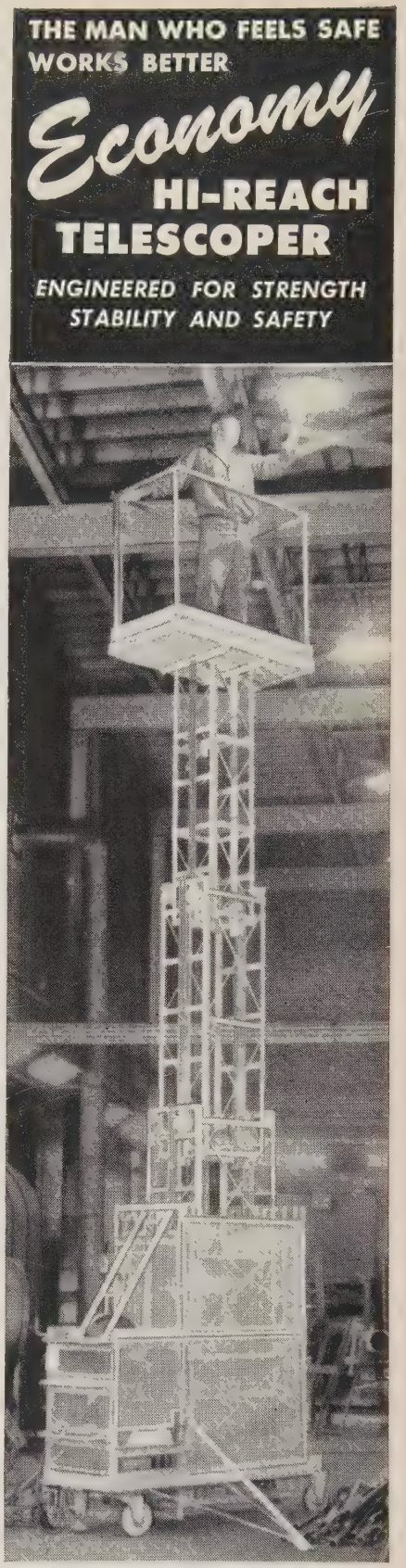
After two years, the program is paying off, not only in improving performance off the job, but in contributing to the new on-the-job record of only one lost-time injury for each three million man hours worked. More than half of the 1954 off-the-job injuries resulted from two causes; the automobile, and slips and falls.

• • •

EMPLOYEES OF NATIONAL TUBE Division's Lorain Works have received the National Safety Council's the Award of Honor. To qualify for the award, the plant established an all-time low injury frequency rate in 1954 of 1.10 and an all-time low severity rate of .15. This compares with corresponding rates for the period 1951–1953 of 1.60 and .57, respectively. During the year, a period of 76 consecutive days without a disabling injury was worked. This amounted to an injury-free accumulation of over four and one-half million man-hours—an all-time plant record.

• • •

IN RECOGNITION OF AN OUTSTANDING safety record, the Ray-O-Vac Company in Madison, Wisc., has been awarded a plaque for their "contribution toward the conservation of life, health and happiness." The award was made by the company's insurance carrier. The Ray-O-Vac Madison group's accident frequency for the past year was 3.9 and the severity record .033.



Safety is our first consideration in building Hi-Reach Telescopers.

During the past quarter of a century of making Hi-Reach Platform Telescopers, our engineers have constantly improved the mechanical construction to obtain maximum stability, smooth time-saving lifting action, and safety.

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(Use Key # H-23 on Inquiry Card on page 71)

MIDVALE, OHIO, COAL DIVISION OF the Columbia-Southern Chemical Corporation has been awarded both a plaque and trophy for winning first place in the first aid demonstrations conducted at the all-Ohio Safety Congress. The Midvale plant's first aid team becomes eligible to compete in the National First Aid Contest to be held at Knoxville, Tennessee, this coming fall.

• • •

THE GLENOLDEN, PA., PLANT OF Sharp & Dohme, Division of Merck & Co., Inc., has received five major safety awards as the result of a perfect safety record over the past two years.

The awards include the No-Accident Award, for completing an entire year without a disabling injury and an Award of Honor for one million man-hours without a disabling injury, both from the Philadelphia Safety Council, and also an Award of Achievement for a 10 percent reduction in frequency.

Operations at the Glenolden plant will be moved to the West Point, Pa., plant in the near future. The West Point plant, with a five-year average accident frequency rate of less than 1.0, has the best five-year safety record of the three Sharp & Dohme plants.

Awards from the National Safety Council include the Perfect Record Award for the completion of the year 1954 without a disabling injury, and the Certificate of Commendation, for two years without a disabling injury. The fifth award is the Certificate of Achievement presented by the Manufacturing Chemists Association for an injury-free year.

• • •

THREE CHEMICAL COMPANIES WERE presented with the Lammot du Pont Safety Plaque awards at the annual meeting of the Manufacturing Chemists' Association. The awards are made annually to the chemical companies showing the greatest improvement in plant safety over a five-year period.

The winner among those companies whose employees worked more than 2,000,000 man-hours annually was the American Potash and Chemical Corporation (Los Angeles, California).

Among firms whose workers put in less than 2,000,000 man-hours annually, duplicate awards were presented to Detroit Chemical Works (Detroit, Mich.) and Tennessee Copper Company (New York, N. Y.). The tie, first in the history of the annual awards, came about when both firms showed an identical percentage decrease in accident frequency rate for the contest period.

Stauffer Chemical Company (New York, N. Y.) was runner-up in the over 2 million man-hour category and Eastern Gas and Fuel Associates (Boston, Mass.) was runner-up in the under 2 million man-hour classification.

The chemical industry, one of the safest in the country, set a new all-time safety record in 1954 with lost-time accidents in the industry reduced to 3.27 per million man-hours worked, an 11 percent improvement over 1953. Accident severity rate declined to 0.49 per thousand man-hours worked, a reduction of 40 percent over 1953. The MCA safety performance report covers plants in North America representing over 757 million employee hours of exposure.

• • •

RECEIPT FOR 1954 OF THE NATIONAL Safety Council's Award of Honor, is announced at Troy, N. Y. by Behr-Manning Division of Norton Company. Nearly 2,000 employees worked nearly 4,000,000 man-hours with only 12 lost-time or disabling injuries. Behr-Manning attained a frequency of injury 69 percent better, and a severity rate 90 percent better, than the average for its industry.

Commenting on the award, Safety Manager Wilbur E. Kidder said, "This was a group effort of which every man and woman at Behr-Manning may be proud. This year we hit the top as the result of a safety program that had the support and participation of every individual in our company."

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AN IMMACULATE
LOW PRICED
STEEL FLOOR
THAT IS
SAFE!
ANCORETTE
STEEL FLOOR PLATES
WITH ITS (33) SAFETY ISLANDS THAT CHECK THE SLIGHTEST TENDENCY TO SLIP OR SKID
(33) TONGUES ANCHORED IN OPPOSING DIRECTIONS IN FRESH CONCRETE TO INSURE IMMOBILITY AND SECURITY OF THE PLATE
TOUGH, HOT ROLLED, DIE CUT STEEL NEVER WARPS, BREAKS OR SHOWS WEAR UNDER TRAFFIC OR PRODUCTION
EASILY INSTALLED BY YOUR OWN MAINTENANCE MEN
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(For details, use Key # H-24 on card on page 71)

MISSOURI PACIFIC BUS LINES HAS announced that eight of its motor coach operators have been presented with awards for driving more than a million miles each on the highways without chargeable accidents and eight more are on the eve of attaining the million-mile mark.

E. L. Moore, who drives a daily run between St. Louis and Kansas City, has 1,314,858 miles of accident-free operation to his credit, while E. M. Hammonds, who now drives daily between Monroe, La., and Natchez, Miss., has 1,206,291 miles. Others who have received awards for a million miles or more of accident-free driving are L. A. Kercheval, Houston, Texas; L. B. Billingsley, Houston; J. W. Terry, Little Rock; R. G. Wilkerson, Little Rock; C. M. McCourt, Kansas City; and W. E. Barlow, Kansas City.

• • •

THE AWARD OF MERIT FOR SAFETY, the highest made by the Department of the Army, has been presented to Major General John H. Stokes, Jr., commander of the Military District of Washington, in recognition of the outstanding record of his command for the year 1954. Similar awards will also be made to the Third Army, Fort McPherson, Ga. and the Fifth Army at Chicago, Ill.

The award recognizes significant improvement in accident experience or maintenance of an outstanding record of effectiveness over the two prior years. Qualification for the award is established by regular inspections during which the command must also be rated superior on its accident prevention effort, interest and participation in the program, qualifications of safety personnel, reporting procedures and the quality of educational, promotional and training efforts.

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YOU NEED A . . .
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U. S. B. of M. APPROVED RESPIRATOR
Big 46 sq. in. filter guards against all toxic or poisonous dusts. Guards against pneumoconiosis or silicosis producing dusts. Full panorama visibility. Can be worn with goggles or glasses. Maximum protection at economical low cost! Order sample today, $3.25 postpaid.
H. S. COVER, SOUTH BEND, IND.
"Respirators for Industry since 1894"
(For details, use Key # H-25 on card on page 71)

Safety Appointments—

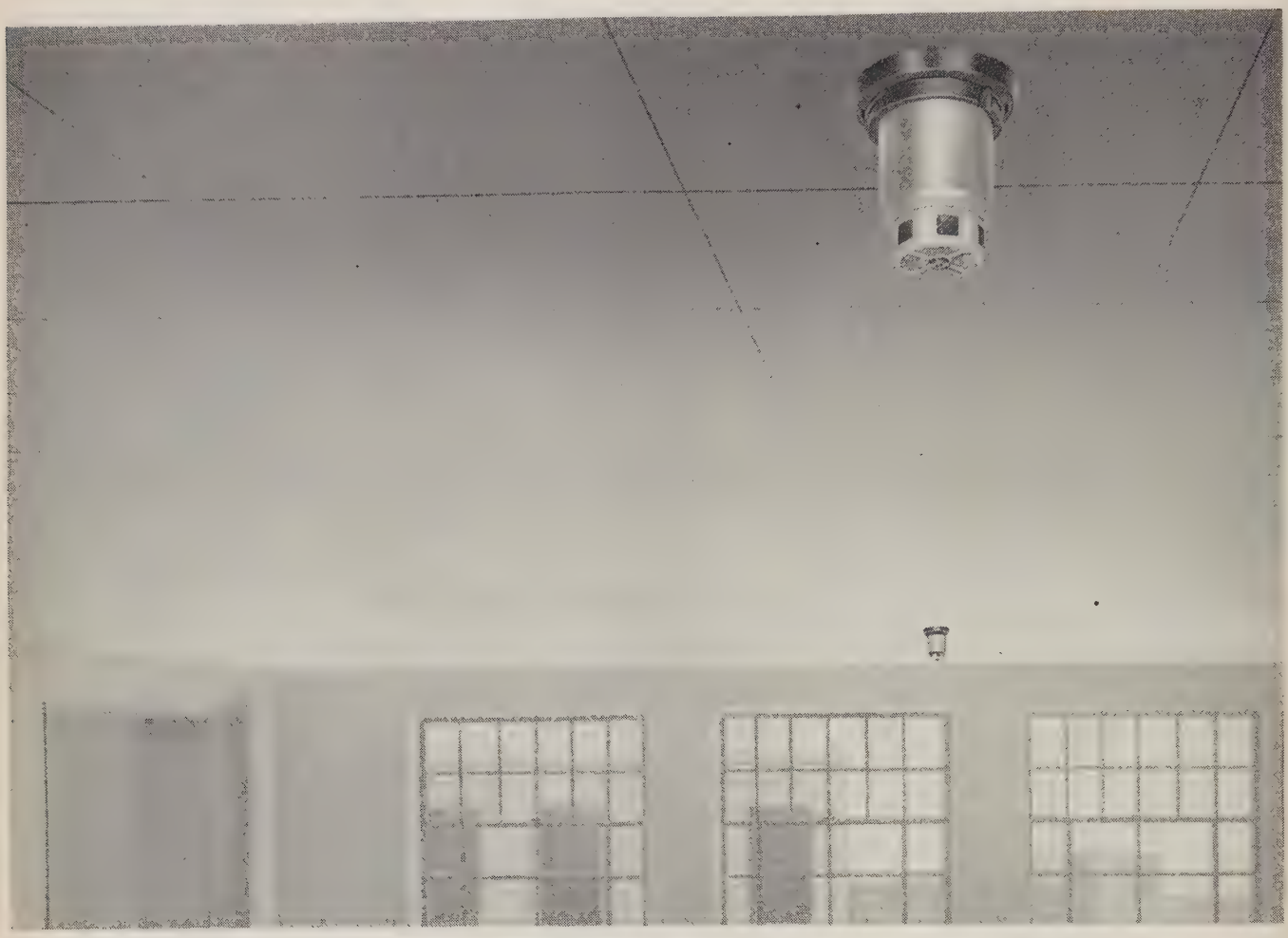
Eliot V. Parker, under whose direction the safety programs of the United States Army were conducted during the last 14 years, has been appointed Chief of the Safety Division of the U. S. Department of Labor's Bureau of Labor Standards, Secretary of Labor James P. Mitchell announced.

The Bureau devises and promotes safety programs in industry, conducts safety training courses, and provides the secretariat for both the Federal Safety Council and the President's Conference on Occupational Safety. It provides safety service to employers and workers in the Maritime industry and to the agencies of the Federal Government and functions both as a clearing house for safety information and as advisor to States and industry.

R. C. Sabens, of Cleveland, Ohio, superintendent of safety for the New York, Chicago and St. Louis Railroad, has been elected chairman of the Safety Section of the Association of American Railroads. Mr. Sabens, who has served as vice-chairman of the A.A.R. Section for the past two years, succeeds J. R. Thexton, of Hoboken, N. J., superintendent of safety for the Delaware, Lackawanna and Western Railroad. Installed as vice-chairman for the ensuing year was R. S. James, of Denver, Colo., superintendent of safety and fire prevention for the Denver and Rio Grande Western Railroad.

New, radio-active, automatic fire guard!

C-O-TWO PRE-DETECTOR SYSTEM



Each pre-detector head protects up to 3,600 square feet of area . . . harmless radio-active element utilizing ionization chamber principle quickly detects all forms of fire . . . requires only simple two-wire circuit and insignificant wall space for controls.

This completely new and positive means of spotting fire is just what you've always needed and wanted . . . detects in the earliest stage, invisible combustion gases, visible smoke, slow smoldering, as well as open flame. The C-O-TWO Pre-Detector System is simple to install, extremely economical to maintain and doesn't depend on thick smoke or heat for actuation.

As many pre-detector heads as necessary can be connected together in a single circuit and up to 16 separate circuits or spaces handled by one system. With a single circuit the pre-detector heads are connected directly to the fire indicating cabinet, while with multiple circuits the pre-detector heads are first connected to one or more space indicating cabinets capable of visually showing by number the exact location of the fire. Relays perform such functions as sounding alarms, closing fire doors, shutting down ventilation and releasing fire extinguishing systems.

The C-O-TWO Pre-Detector System has been subjected to extensive testing and carries Underwriters' Laboratories, Inc. listing, as well as Factory Mutual Laboratories approval. Proven pilot installations have been made in such diversified properties as a television station, an electric power company network analyzer room, a railroad signal tower, an airline flight training equipment room and the offices of an insurance company.

Don't take unnecessary chances any longer . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts about this new C-O-TWO Pre-Detector System today!

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(For details, use Key # H-26 on card on page 71)

The Fire Front

Civil Fire Defense

HAVING HALF a city where the whole might have been destroyed, still represents just so much on the plus side, was the affirmation made by speakers at the National Fire Protection Association 59th annual meeting.

"This is no time to throw up our hands and say that the magnitude of the problems is too great in the face of atomic and hydrogen bomb warfare," Horatio Bond, Boston, NFPA Chief Engineer, told a panel session of the Fire Marshal's Section.

"Any efforts to propagate programs to expedite evacuation of population before impending attack are worth while, in my opinion," said another panelist, George J. Richardson, Washington, Secretary-Treasurer, International Association of Fire Fighters.

"We have a problem in Canada that our friends down here don't often think of: we realize that invading bombers from the north would be shot down over our territory, and that the bomb loads of a large proportion of those planes would be detonated when the hits are made or the plane crashes," W. J. Scott, Toronto, Ontario, Fire Marshal of his Canadian province, commented.

"Radioactivity is not only a wartime hazard but is rapidly becoming a peacetime problem," Lloyd Layman, Battle Creek, Michigan, Director, Fire Office, Technical Advisory Services, Federal Civil Defense Administration, said in introducing the panel. He urged more widespread training, among fire departments, in use of radioactivity monitoring instruments.

Monitoring instruments were discussed by several speakers, and there was emphasis also on the problems of effective organization of fire departments for meeting emergencies of modern bombing.

"A large number of small units can't work smoothly together," Mr. Bond said, commenting that the core of CD fire fighting planning still should be the large metropolitan departments, not just because of their high degree of organization but because they could afford equipment, training and facilities not available to small departments. Organization of departments on a state or provincial basis might be the answer to the problem, he suggested.

"I am convinced and I am confident that other students of this problem will agree that conventional fire fighting equipment and methods are inadequate to the task of wartime fire defense," Mr. Layman said. "I am willing to admit that our fire fighting techniques are based almost entirely on limited knowledge obtained from trial and error (mostly error) on the fireground."

"The time is overdue in this field for basic scientific research to determine the natural laws that govern combustion, flame production, mechanics of the flame or thermal column, and flame extinguishment."

It was Mr. Layman who commented on the "peacetime problem" of radiation: "The use of radioactive materials in industry is increasing and they are being transported daily by common carriers, therefore, fire service personnel must be trained and equipped to deal intelligently with this hazard." It is not a complicated subject, he said: an ordinary fireman can learn enough, in a half hour, to be able to protect himself and his fellows from over-exposure to radiation.

May Losses Climb

ESTIMATED FIRE LOSSES IN the United States during May amounted to $71,789,000, the National Board of Fire Underwriters has reported. This loss represents an increase of 15.3 percent over losses of $62,282,000 reported for May 1954, and a decrease of 8.7 percent from losses of $78,632,000 for last April (1955).

Losses for the first five months of 1955 now total $398,929,000 an increase of 2.2 percent over the first five months of 1954, when they amounted to $390,457,000. These estimated insured losses include an allowance for uninsured and unreported losses.

Fire Problems

RIDDLE: What possibly could hospitals, lumber yards, the cotton industry, clothing manufacturers, and laboratories using radioactive materials have in common?

ANSWER: The threat of fire.

Representatives of these otherwise unrelated interests shared a common platform and sought a common goal at the National Fire Protection Association's 59th annual meeting in Cincinnati.

(Continued on page 62)

The Mechanics of Fire

By **DAWSON POWELL**
Technical Editor
Grinnell Company, Inc.

A PICTURE of the life cycle of fire in Class A materials (which shows us new ways of attacking fire and preventing its spread, permits more accurate appraisal of potential fire situations and supplies an outline for understanding fire extinguishment) has been developed by correlating the research conducted in the Grinnell Fire Control Research Laboratories and the published reports of research conducted at the U. S. Bureau of Mines.

For what it may contribute to an understanding of the ways in which water extinguishes fire, the following ***simplified*** description of the Mechanics of Fire is offered. This discussion limits the definition of "Fire" to: "The principle of combustion as manifested in light and heat, especially ***flame***."

The six observable or measurable factors in the life cycle of a Class A fire are as follows:

1. Input-Heat
2. Fuel (A Vapor or Gas)
3. Oxygen (From Air)
4. Proportioning
5. Mixing (For Near-Burning or Remote-Burning)
6. Ignition Continuity

Examples will be cited showing the influence of each of these factors on the starting, spread or extinguishment of fire.

Editor's foreword: The accompanying explanation of "The Mechanics of Fire" summarizes talks given by the author to trainees and promotion classes of the Providence Fire Department, semi-annually since 1947; to the Providence Naval Reserve Ordnance Unit 1-3 & Supply Unit 1-2 in 1948; to the Fall General Meeting of the American Institute of Electrical Engineers in 1951; to the E. I. duPont deNemours Fire Protection Conference in Wilmington, Del. September 1953; and to the University of Maryland Short Course for Fire Inspectors also in 1953. It amplifies the "Fire-triangle" explanation to make it practical and useful in analyzing special hazard fire situations.

Input-heat, such as that supplied by friction to the chemicals forming the head of a match, initiates combustion. Burning of the gases from the chemicals then distills vapors or gases from the wood of the match, and these vapors or gases also burn as flame. Although wood is classed as a flammable material, it is generally recognized that wood does not burn as a solid; nor oil as a liquid. The actual FUEL is the vapors or gases from these solids and liquids.

Flame Behavior

As in the case of the match, it is necessary to have a source of input-heat to initiate fire, and it is equally essential to have a continuing source of input-heat if the fire is to continue and to spread. The function of supplying input-heat for the distillation of vapor fuel after the chemicals of the match head have flared and exhausted themselves is taken over by the flame of the burning vapors. If this heat is dissipated into the atmosphere by holding the match head upright, distillation of fuel from the match stick gradually diminishes and the flame goes out for lack of fuel. (Figure 1) If the match head is tilted downward so that the flame surrounds fresh wood of the match, input-heat from the flame maintains the supply of fuel (distilled vapors or gases) and the fire spreads up around the match stick. (Figure 2) This difference in a match's behavior is well known to pipe smokers, who want a broad flame for an even light, but its significance in the life cycle of fire is generally overlooked.

To prevent fire or limit its spread, Fire Protection engineering uses a considerable number of standard devices which depend for their effectiveness on preventing input-heat from reaching materials that distill off flammable vapors. Some of these are fire doors and fire walls to limit fire spread; insulated, fire-resistant, safes and vaults; sprinkler water curtains outside buildings to protect them from the input-heat from exposure fires. Wetting down with fire hose sprays serves the same purpose.

A dramatic use of the "preventing input-heat from reaching potential fuel" technique is the underground coal-fire extinguishing program being carried on with the cooperation of the U. S. Bureau of Mines. A trench is excavated from the surface down through the coal seam ahead of an underground fire. Filling this trench with sand, gravel or earth fill insulates the coal in the seam ahead of the fire from input-heat as the underground fire burns up to the insulating fire wall formed by the fill. Millions of tons of coal already have been saved by this method, preserving a great natural resource for posterity.

Is Something Burning?

As soon as we have accepted the proposition that input-heat is an essential element in the initiation, maintenance, and spread of fire in Class A materials, we are ready to understand that fire in these materials is actually a vapor or gas fire. At this point we find that abundant research has been conducted by the automotive industry, the gas industry and the petroleum industry to help us complete our picture of the life cycle of fire. We also find a use for those (mysterious to so many) tables of flammable limits or explosive limits published in fire protection handbooks. We find, in fact, that we can't understand fire, its spread or extinguishment, without them.

Let us look at what happens, according to the classical theory of gases, when a mixture of flammable vapor or gas and air burns. To keep our illustration (Figure 3) simple

Fig. 1. Heat of burning vapors is dissipated into surrounding atmosphere when match is held upright, so flame goes out.

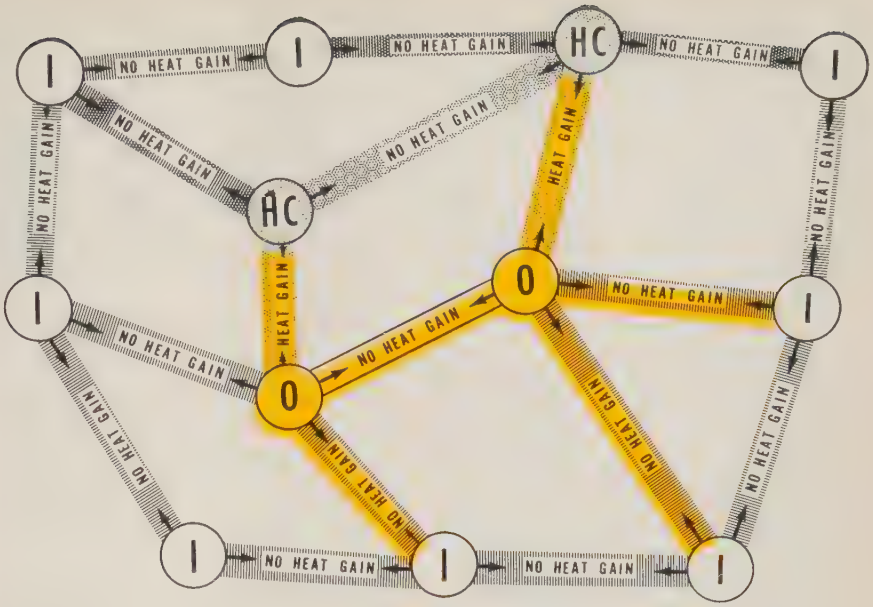

Fig. 3. Shows that only 2 possibilities for heat energy gains from intermolecular collisions occur in a gas-air mixture with 2 minimum units of air and 2 hydrocarbon molecules.

we will label all our molecules of flammable vapor or gas HC (for hydrocarbon) and all our inert gases which are present in air (I). We know that air contains about 79 percent inert gas to 21 percent active oxygen. That goes for fresh country air, but to simplify our illustration we will round off the proportions to 80 percent inert gases and 20 percent active oxygen, giving us four inerts (I) to one active oxygen (O), the simplified proportions used in Figure 3.

Molecular Collisions

The classical theory of gases teaches us that all the molecules in a gas or a mixture of gases are in motion, moving in random directions. Their free path or free travel in any direction is determined by the distance they can travel before colliding with another molecule. After each collision, each molecule starts off in a new direction, similar to what happens when two billiard balls collide, but in three dimensions. The classical theory also tells

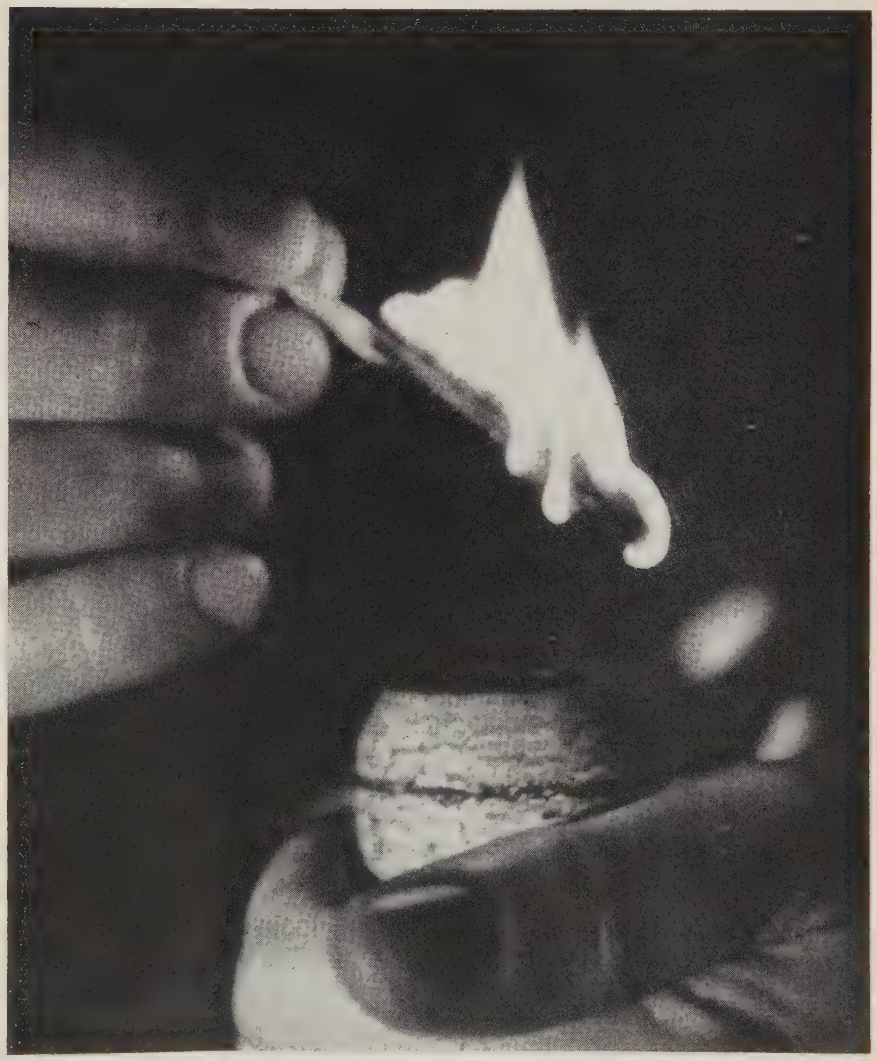

Fig. 2. If match in figure 1 is tilted down so that the flame surrounds fresh wood of the match, input-heat from the flame maintains the supply of fuel (distilled vapors and gases) and the fire spreads up around the matchstick. This difference in a match's behavior is well known to pipe-smokers as illustration shows. In order to get an even light match must be tilted downward to bowl of pipe. This behavior is also important in the life cycle of fire.

TABLE 1.

Molecular Collisions		Results
Inert gas	—Inert gas	No Heat (Energy) Gain
Inert gas	—Oxygen	No Heat (Energy) Gain
Oxygen	—Oxygen	No Heat (Energy) Gain
Inert gas	—Hydrocarbon	No Heat (Energy) Gain
Hydrocarbon	—Hydrocarbon	No Heat (Energy) Gain
Oxygen	—Hydrocarbon	Heat (Energy) Gain

us that the temperature of the gases determines the speeds of their motions, or the violence of their collision. Thus, temperature and speed of motion are directly interrelated.

In the fire reaction only the collision between oxygen (O) and hydrocarbon molecules (HC) results in an available heat (Energy) gain. A glance at our diagram will quickly show us that with the random motion of gas molecules we can expect molecular collision results as shown in Table 1. From this summary we can see that of six possible collision pairs only one pair (when oxygen collides with hydrocarbon) results in a heat energy gain.

Too Lean, Too Fat, or Just Right?

Now let us state the known facts about flammable gas and air mixtures. They can exist in three conditions: 1. too lean to burn, 2. within the flammable limits, and 3. too rich to burn. In terms of our analogy, "1. too lean to burn" means: too few oxygen-hydrocarbon collisions to maintain the mixture at or above ignition temperature; "2. within the flammable limits" means: just the right proportion of oxygen-hydrocarbon collisions to maintain the mixture at or above ignition temperature, and "3. too rich to burn" means: too many non-energy-releasing hydrocarbon-hydrocarbon collisions and too few oxygen-hydrocarbon collisions to maintain the mixture at ignition temperature.

From tables of flammable explosive limits we know that one vapor unit of gasoline must be mixed with from 12 to 70 units of air in order to burn as flame. This means, in the approximate terms of our diagram, that one gasoline vapor hydrocarbon molecule must have available the oxygen molecules in at least 12 units of air with which to collide. But, while it gets 12 oxygen units for 12 units of air, it also gets 48 inert gas units in the same amount of air. In other words, as the number of oxygen-hydrocarbon collision possibilities increase, the hydrocarbon-inert gas collision possibilities increase approximately four times as fast. The active oxygen as supplied in air is already diluted with nearly four times as many inert molecules. We should note also that the available heat energy gained in oxygen-hydrocarbon collisions spreads throughout the mixture by inter-molecular collisions and by radiation (as radiant heat) travelling with the speed of light.

When we recognize that only the oxygen-hydrocarbon collisions produce an available energy gain it becomes evident why mixing is an important factor in all flame propagation. In thousands of flame column tests, conducted in the Grinnell Fire Control Research Laboratories by the late Robert Cranston, it required something more to produce flame than merely having the right proportions of flammable vapor and air in the flame column. The air and vapors ***had to be mixed before ignition***, if flame was to travel up the column. Proportions of flammable vapor and air known to be within the flammable limits would not ignite or burn until mixing had taken place. After mixing, the same ingredients would produce a flame cap, starting at the spark electrodes in the base and travelling upward to the top of the column. In molecular terms: in the unmixed vapors only hydrocarbon-hydrocarbon or hydrocarbon-inert collisions were taking place; while in the air-filled portions of the column only oxygen-oxygen, inert gas-inert gas and oxygen-inert gas collisions were taking place. After mixing, oxygen-hydrocarbon collisions became mechanically possible in sufficient number to propagate the flame from the bottom to the top of the column.

A commonplace example of the necessity for mixing is the burning of a tank of medium or heavy fuel oil or automobile crankcase oil in the open air. After the oil is ignited, the flame above the oil supplies the input heat to maintain a supply of hydrocarbon molecules, the surrounding air provides more than enough available oxygen to unite with the hydrocarbon molecules, the flame provides a source of continuing ignition . . . and yet we will usually observe a column of black smoke rising from such a fire. This can be explained by assuming that near the center of the vapor column rising from the heated oil mostly hydrocarbon-hydrocarbon

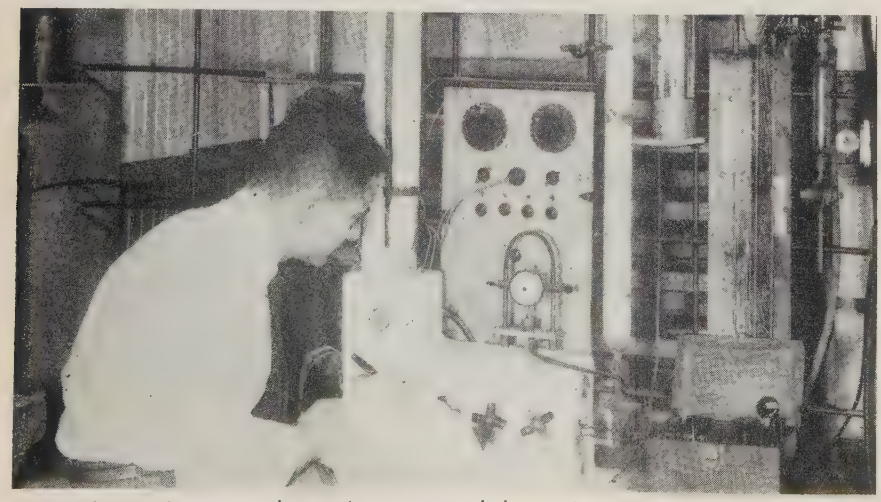

Fig. 6. Flame column tests show water vapor needed to make gas mixture too lean to burn.

collisions are taking place. Thus, the excess of hydrocarbon vapors, which fail to mix with air above the fire, escape beyond the ignition range of the flames before a flammable proportion and mixing with air occurs.

"Clean" and Sooty Burning

Taking number 3 fuel oil as an example, we can see it all burning with a clear flame, without sooting, in any properly adjusted gun-type oil burner, such as we use in our homes. The gun-type burner when properly adjusted, mechanically atomizes the oil, mixes the vapors with air in the proper proportions and supplies an electric spark as a source of ignition. Result: a clean burning flame with practically no sooting inside the furnace, yet this is the same oil which will give us a sooty black column of smoke above the fire when we burn it in the open without the gun-type burner's special mechanical provisions for thorough mixing and proportioning.

Whether or not thorough mixing occurs explains the phenomena of "*near burning*" or "*remote burning*" of distilled flammable vapors. When a wood fire is just starting in a fireplace or a campfire, the flammable vapors distilled from the wood burn as flame near the wood from which they are being distilled. This is "*near burning.*" After the fire is going good the addition of more dry fuel results in the excessive distillation of vapors which do not complete the necessary proportioning and mixing for burning as flame until they are several inches or even many feet above where they are distilled from the wood. In this situation we observe high flames and "*remote burning.*"

This phenomenon of "*remote burning*" is of interest to the fire protection engineer because it explains those commonly observed phenomena the so-called "hot air explosion" and the so-called "back-draft" which firemen fear. It also explains the remote breaking out of fire in attics from a fire which may start in the basement or a lower floor.

We have a plausible explanation of such occurrences if we assume that excessive amounts of flammable vapors and gases are being distilled off at the place of origin of the fire. Being hot, they travel upward through a partition or up an elevator well. The turbulence of their flow and their movement into areas where there is additional air promotes mixing with that air to produce a flammable mixture. When any part of the entire volume of mixed flammable gases or vapors and air is at or above the auto-ignition temperature for that mixture, flame propagation is to be expected. If the flame propagation is fast enough it will be called a "hot air explosion." If it is less violent, but produces enough heat to distill off flammable vapors from wooden beams or other flammable material in the attic, experienced firemen will track it down and fight it as a remote attic fire. All firemen are usually trained to expect and to look for such fires in private homes, tenements and apartment houses.

The back draft which firemen fear, occurs when they break in the door or window of a room which is filled with hot flammable gases and vapors in a mixture too rich to burn. The blending with outside air provides the supply of oxygen necessary to form a flammable mixture. A searing puff of flame blows back into the faces of the firemen.

Big-Inch "Fire" Line

"*Remote burning*" gases and vapors may be likened to manufactured or natural gas which may travel miles or thousands of miles in a condition in which only hydrocarbon-hydrocarbon collisions are possible. Under these conditions, gas from Texas travels all the way to New England where it is proportioned, mixed and ignited to burn in gas stoves. In the same way we can envision gases and vapors in a heated mixture, too rich to burn, traveling upward through ducts formed by partitions and studding, becoming proportioned and mixed with the air in an attic and, being

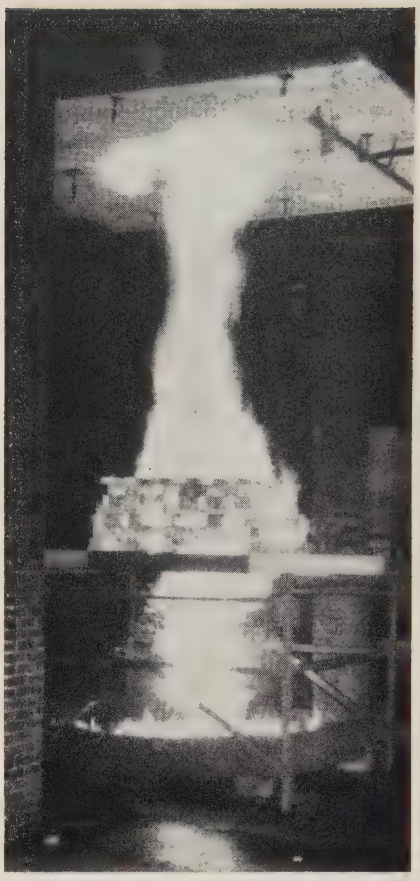

Fig. 4. Remote-burning gases sear ceiling panel before automatic sprinklers open.

Fig. 5. Under water spray, only sheltered gas-fed torch still burns its vapors.

above its auto-ignition temperature, bursting into flame in that remote location.

Ignition continuity, the sixth factor in our picture of the life cycle of fire, is explained by the velocity of travel necessary to bring about union between hydrocarbon and oxygen molecules when they collide in a mixture whose proportions are within the flammable limits. Auto-ignition temperature is a commonplace expression in fire protection language. When we refer to the classical theory of gases we find that we can substitute the words "*molecular velocity*" for temperature (the molecular velocity varies with the absolute temperature, and, knowing either, the other can be calculated). Making this substitution we can talk about the auto-ignition velocity necessary, in collisions between hydrocarbon and oxygen molecules, to produce flame. We can also point out a way of preventing flammable mixtures of air and gas from burning by simply reducing their molecular velocities to some point below the velocity necessary for continuing ignition.

In the ordinary fire, if the flame (which is the source of both input-heat and continuous ignition) can be interrupted long enough to break the cycle, the fire is extinguished by interruption of the self-perpetuating fire cycle. A commonplace example of this technique is extinguishing fire at oil or gas wells by the use of explosives. The area around the well is usually wet down by watering carts and hoses to eliminate sources of re-ignition. The discharge of the explosive momentarily interrupts the downward travel of the flame in the gas-and-air mixture above the well. This momentary interruption of ignition continuity has resulted in the successful extinguishment of thousands of oil and gas well fires. And, even though flammable mixtures of gas and air above the well are produced seconds later, the fire does not resume unless re-ignited.

Having outlined the life cycle of fire in relation to the six factors (input-heat, fuel, oxygen from air, proportioning, mixing and ignition continuity) which help us to understand the mechanics of fire in Class A materials, let us look at some significant recent advances in fire control and extinguishment and note their relationships to these factors.

New Distribution Patterns

The most radical recent improvement in fire control and extinguishment is the industry-wide adoption of a new distribution pattern for the spray from automatic sprinklers and the abandonment of the idea that sprinklers must wet ceilings in order to protect them. Understanding the sound basis for the improved performance obtained with this new distribution pattern calls, first, for an understanding of the roles of input-heat and of water vapor which dilutes the active flammable vapor and oxygen mixtures with non-flammable constituents.

Ceiling protection against burn-through requires only that the flammable materials in the ceiling be protected against temperatures at which flammable vapors or gases will be distilled from them. The input-heat which raises the ceiling to distillation temperature comes from the flame of the fire beneath it. The most dramatic difference measured in fire tests at the Factory Mutual Research Laboratories and at the proving ground of Grinnell Fire Control Research Laboratories, which I have witnessed, is the instantaneous lowering of ceiling temperatures below the distillation temperature of wood when the first spray sprinkler opens. The wide horizontal spread of spray knocks down ceiling temperatures from 1,000°F to around 500°F—a temperature at which few ceiling materials will distill off sufficient flammable vapors to maintain a flame.

A close second in interest is the fast knock-down of flame in gases burning remotely from the fire. Let us consider as "remote burning" all vapors which burn at a distance greater than a few inches from the places where they are distilled off. "Near-burning" gases are those ig-

(For details, use Key # H-27 on card on page 71)

nited near enough to the material being distilled to contribute an appreciable amount of input-heat for the distillation of more vapors from the same materials. We then recognize that the high flames which reach the ceiling are nearly always remote burning. As soon as water spray reaches the Class A fire's materials, which are distilling off the remote burning vapors that lick the ceiling, in most cases the flames are seen to recede from the ceiling; and, within minutes few if any of the flames reach more than a foot above the materials in the fire. (See Figures 4 & 5.)

In everyday language this knockdown of remote burning gases is attributed to "smothering" by the water vapor or steam released when water strikes the burning embers of the fire. If, however, we consider this phenomenon in the light of what the kinetic theory of gases has to teach us, we get a more informative picture of what is actually occurring. Since any flammable mixture of gases and air is made up of both active (hydrocarbon and oxygen) molecules and inactive inert gas (principally nitrogen) molecules, it is easy to see that the addition of an abundant supply of inert water vapor molecules dilutes the active molecules. This superabundance of inert molecules greatly decreases the chances of the oxygen-hydrocarbon collisions which release heat energy and maintain the flame.

The kinetic theory of gases also tells us to expect another effect which is readily observed. We know that when we mix two or more gases or vapors they all come quickly to the same temperature. Thus, when we add water vapor, at a lower temperature, we know that the final temperature of the mixture will be lower than that of the mixture before the water vapor was added. The addition of water vapor lowers the kinetic energies and velocities of the active molecules. As soon as the velocities of the active molecules are reduced below their auto-ignition velocities, chemical combination (with the resultant release of heat energy) is not to be expected, even though collisions between active oxygen and active hydrocarbon continue to occur. (Figure 6)

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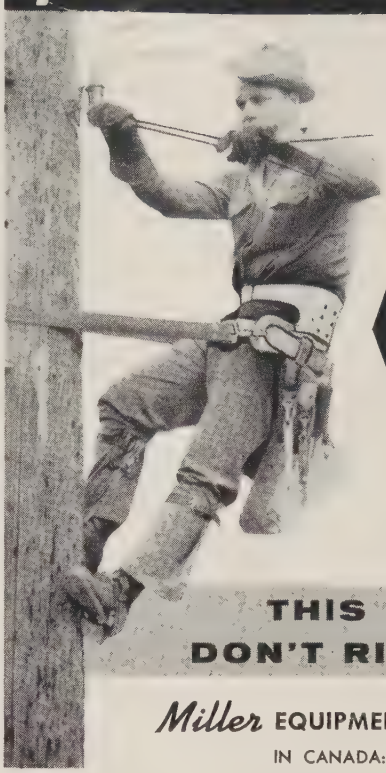

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This detailed analysis shows us that we have two effects contributing to the knockdown of flames in remote burning gases above a fire: 1. Dilution of the active molecules in the air-vapor mixture by inert water vapor, thereby reducing the number of possible collisions between active molecules, and 2. Reduction of the velocities involved in collisions between active molecules in the mixture. The importance of dilution can be appreciated when it is remembered that a drop of water turned into steam occupies approximately 1,650 times its original liquid volume. The temperature of steam is still below the auto-ignition temperature of most flammable vapor-air mixtures.

Combination of Water

At the same time that dilution and cooling are occurring in the remote burning gases from the fire, the vaporization of water at the surface of the burning embers is removing input-heat from the materials which are distilling off flammable vapors or gases, thus diminishing the fuel supply.

Water spray, then, attacks fire in three ways: by cooling the embers giving off flammable vapors to reduce and cut off the supply of fuel, by diluting of the fuel and oxygen in fuel-air-water vapor mixtures, and by cooling the fuel-air mixture below its ignition temperature.

The quick knock-down of remote burning flame when a spray sprinkler opens up on a Class A fire can be simulated in a fireplace or open bonfire by using green wood, which contains a high percentage of water, as new fuel for the fire. A fire which is sending up high flames can be turned into a low fire, with no remote burning flames, simply by piling on enough green wood. Input-heat penetrating green wood is used up in distilling off water vapor in such quantities as to interfere with both the near-burning and remote-burning of the distilled vapors. The water in the wood comes out as

water vapor at temperatures up to 212°F, whereas higher temperatures are generally required for the distillation of flammable vapors or gases. The same actions of water vapor occur here as when a spray is applied to the outside of wood, the water in this case coming from inside. Many a sportsman has killed a good fire by letting water vapor from green wood dilute and cool the vapors and gases which were burning as flame in his campfire.

From this picture of the life cycle of fire and its extinguishment by water spray, it may be seen that in appraising potential fire situations first consideration must be given to the ease with which a so-called "flammable material" can distill vapors which will burn as flame. Just as an example, the ease with which industrial oils are turned to flammable vapors, whose flames provide input-heat to distill off more flammable vapors, contributed largely to America's largest single industrial fire loss in 1953. The input-heat from what started as a small fire in the Livonia Plant of the General Motors Company, finding abundant "flammable material" as it spread through the acres of plant space, not only distilled off all available vapors but was sufficient to weaken and collapse the steel structure. Wherever such materials are used or stored they deserve to be evaluated for their BTU content in case they take fire and become a source of input-heat for further spread of fire.

It is hoped that this description of the mechanics of fire and of water's role in extinguishment will lead to a better understanding of the practical use of water spray as a protector of lives and property.

Pictures by courtesy of Grinnell Company, Inc.

Fire Problems—
(Continued from page 55)

Russell C. Nye, administrator of the Northwestern Hospital, Minneapolis, Minnesota, outlined the "Fire and Evacuation" plan developed by his hospital over the past nine years.

Evolved by an employee-management committee working with the city fire prevention bureau and an insurance safety consultant, the three essential elements of the plan, he said, were: 1—a warning system; 2—an evacuation (movement of patients) plan; and 3—training for disciplined group action. But, he warned, all such plans are only "as good as the people upon whom they depend.

"We try to be sure that each employee understands the fire orders and help him to realize that not only many lives depend upon him, but, perhaps even his own life may depend upon complete understanding of his individual responsibility and assignment."

Following Mr. Nye, chief engineer W. G. Schultz of a leading insurance company, termed lumber yards modern-day "conflagration breeders." He told how fires originating in lumber yards too often have spread to adjacent homes and buildings and resulted in the destruction of entire communities. However, he cautioned against placing the whole blame for such destruction on the lumber dealers.

"The community itself is often responsible," he said, explaining that many lumber yards, once sensibly located on the outskirts of town away from other property, are now entirely hemmed in by dwellings and other buildings as the result of the town's shortsighted expansion.

He listed the basic fire protection measures that every lumber dealer should observe. But for the real solution to the serious threat of lumber fires to every community, he added, "both the lumber dealers and the city fathers should get their heads together before it is too late."

Flammable Fabrics Control

On another aspect of fire's threat to community well-being, a fire protection engineer revealed that the principal victims of flammable clothing fires are children. Arthur Spiegelman, senior research engineer of the National Board of Fire Underwriters, told the meeting that public concern over dangerously flammable wearing apparel has grown steadily over the past ten years.

"The series of fatal accidents involving little boys in cowboy costumes and the thousands of 'torch' sweaters which appeared on the market in 1949," he said, "were instrumental in focussing interest on the necessity for adequate safety regulation of the type of textiles which are used for wearing apparel."

One result, Mr. Spiegelman pointed out, was the passage of the "Flammable Fabrics Act," effective last July 1, 1954, which provides for the testing and restricting of those textiles in the "rapid and intense" burning class.

He added that the act represents "the first passage of federal legislation to protect the public from the hazards of fire."

As a next step, he called for the gathering of more "factual data to better indicate where and in which materials the hazard exists."

Fire, too, is an ever-present threat to this country's 2.3 billion dollar cotton industry, a fire protection engineer reported. The head of the Fire Prevention and Engineering Bureau of Texas, A. Sidney Briggs, described the fire hazards confronting cotton from its initial ginning on through its transportation and storage.

He revealed that, contrary to former beliefs, recent tests have "practically proven" that cotton gin fires are caused by friction rather than static sparks igniting the cotton. Friction has also been found to be the principal cause of cotton transit fires, he said, and added that railroads are particularly concerned, having experienced losses of nearly 2 million dollars last year from cotton fires.

A third area in which fire has become an increasingly serious problem according to Mr. Briggs, is the storage and reconditioning of baled cotton.

Here, he said, nearly impossible fire protection demands, huge concentrations of value, and new and unfamiliar fire hazards require our "early attention before harmful practices are permanently adopted."

transportation safety

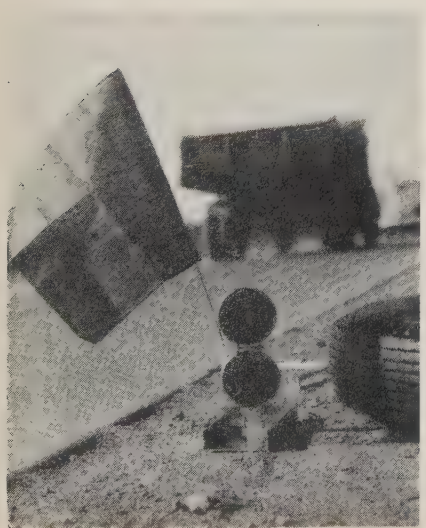
NEW SAFETY FLARE

A HIGHWAY SAFETY item long used by truck drivers has been redesigned to provide a flare for passenger car use. Standard equipment for many years with interstate truckers, the warning device has been modified so that it can be stored compactly in glove compartments.

Visible Half-Mile Away

The bright red reflector of "Lucite" acrylic resin can be seen more than half a mile away by approaching motorists. During the day, the red flag is an added safety factor. The device is aimed at reducing the number of "sitting duck" accidents to drivers and passengers of stalled or disabled cars. It is estimated that during 1954 over 41 million disabled vehicles were stalled along the nation's highways.

For complete details, use Key No. TS–17 on free inquiry card on page 71.



How Do YOU Look At An Accident?

These problems test your ability to judge accident responsibility based on modern defensive driving techniques. They have been devised by Donald S. Buck, safety director, U. S. Army Transportation Corps. Assume that each report is based on a true accident; that each driver's statement is true and complete as given. Decide in each case whether the driver caused the accident or was victim. Remember that you are not deciding who is at fault, but determining who helped to cause the accident.

Case No. 5—Driver's Statement

"It was dark. I was driving along the highway, when I met a vehicle with blinding headlights coming toward me. The other driver refused to dim his lights, and it was impossible to see where I was going, so I ran off the road on the right side and upset. This accident was caused by blinding headlights. If the other guy had dimmed, the accident would not have happened. This other fellow didn't even stop, so I don't know who forced me off the road. Luckily, a car following me stopped to help. This driver backed up my story on the blinding headlights."

Case No. 6—Driver's Statement

"I was driving on the highway, when an old 'jalopy' driven by some local yokel, suddenly pulled out of a side road directly into my path. I applied my brakes and cut my wheel sharply, trying to pass behind him, but my steering gear failed, and my vehicle crabbed around and skidded into this old wreck. I guess my tie rod must have broken, because no matter what I did with the steering wheel, the car would not respond. Luckily my skid marks showed all brakes held all the way, so my steering gear was out of whack!"

Answers are on page 66

How's Your Posture At the Wheel?

SAFETY EXPERTS are finding good posture has a marked application to the problem of both truck and car drivers," says Healthways, a publication of the National Chiropractic Association. "The many injunctions to sit tall, stand tall and walk tall, which are part of the basic public service of chiropractic, have been found by safety experts to have a definite effect towards minimizing the effects of fatigue, with its attendant hazards."

Good posture behind the wheel means driving longer without weariness, and maintaining a wider safety margin. Motorists should be warned against the tendency to slump after a few miles of driving. Back and shoulder muscles have to take the burden which the spine was designed by nature to assume. The result is both nervous and muscular fatigue.

Sitting too near or too far from the steering mechanism creates tensions which tire the coordinating and manipulative muscles quickly, and "tucking the wheel into the midriff" and "sitting sidewise" are

exhausting and therefore tend to create accidents.

With proper posture behind the wheel, the driver has a clear view of the road and maintains maximum use and control of the body. For this the driver should seat himself behind the wheel as he normally sits in a chair. Adjust the seat so that forearms are about parallel with the plane of the wheel. Get the legs in a comfortable position so they can operate the foot pedals easily.

Windshield Research

SAFER, ICE-FREE aircraft windshields now are being built as the result of a 4½-year research program concluded recently at Armour Research Foundation of Illinois Institute of Technology, Chicago.

The project was sponsored by the Wright Air Development center, Dayton, Ohio, so designers could specify failure-proof windshields that would never shatter, but only crack under the worst military and climatic conditions.

Two of several important developments were:

1. A system was developed for measuring over-all optical quality of windshields as they were affected by imposed laboratory conditions. The system employs a rectifying plate that corrects for distortion directly, thus eliminating mathematical corrective calculation after test photographs are made.

2. A windshield mounting employing a synthetic fiber cloth was developed. The fiber, replacing aluminum in some applications, improved stress isolation of the windshield, necessary in conditions of intense airframe distortion and vibration.

Most of the research was undertaken to find a pressure-proof, distortion-free, anti-icing windshield that would be satisfactory for global operation. One experiment sought to keep the temperature on the outer surface of the windshield at about 40 degrees F. to prevent ice from forming.

In others, the Armour Research Foundation scientists had to consider air friction, evaporation, thermostatic arrangements for controlling the heat, stresses, and other complex factors.

Safety also entered the picture in the case of pressurized cabins or cockpits.

Experimental models were subjected to low temperatures, thermal shocks such as might be encountered in flying into a super-cooled cloud, stresses caused by the heat input in de-icing, more stresses induced by cabin pressurization—still others due to airframe distortion, speed, or air gusts.

Traffic Engineers Meeting

THE SILVER ANNIVERSARY meeting of the Institute of Traffic Engineers will be held from October 23 to 27 at the William Penn Hotel in Pittsburgh, Pa. The first meeting of the Institute was held at the same place on October 2, 1930.

Turnpike Cuts Accidents

NEW RECORDS in traffic volume, together with further sharp improvement in its safety record, highlighted the annual report of the New Jersey Turnpike in 1954.

A total of 24,705,851 vehicles moved over the Turnpike last year, a daily average of 67,687. This daily average would compare with the engineers' estimate of traffic for 1954 of 27,700 vehicles.

Significant improvement was made in the safety record. The accident, injury and fatality rates were at the lowest levels since the Turnpike opened in November, 1951. Accidents in 1954 totaled 550 and were at the rate of 59.2 for each 100 million miles of vehicle travel. That was about one-seventh the rate on New Jersey's public highways and a mere fraction of the rate on the nation's highways as a whole.

Noteworthy were the reductions in injuries and fatalities. These were down by 20.3 and 36.1 percent, respectively, compared with 1953. There were 23 deaths caused by fatal accidents in 1954 of which 10, or 43.4 percent, involved single vehicles, and the remaining 13 were caused by rear-end, or other, collisions.

Of particular significance is the fact that the fatality rate on the Turnpike for 1954 equaled 2.47 per 100 million vehicle miles, the lowest of any state in the nation (1953 figures the latest available). It compared with 6.2 on the nation's highways for the first eleven months of 1954.

"The achievement in safety last year," add the Commissioners, "can be attributed to the excellent cooperation of motorists and truckers using the facility, the rigid enforcement of traffic regulations by the State Police detachment assigned to the Turnpike, and the adoption and installation of additional safety measures. The Authority will continue to explore ways and means of maintaining the excellent record which has been established and strive to accomplish further improvements."

FOR SAFETY'S SAKE . . .

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(For details, use Key # H-29 on card on page 71)

Making the Billboard A SAFETY ASSET

by **LAWRENCE C. HOWE**
L. C. Howe Safety Services

IT IS NOT the purpose of this article to examine and appraise the science and mechanics of road construction, the safety engineering of motor driven vehicles, or the complexities of problem facing traffic experts in their need to accommodate adequate vehicle use to inadequate streets and highways.

The fruition of their efforts, and the astronomical expenditures sure to be involved, still cannot produce the totally accident-free highway we all desire, ***unless safe driving is thoroughly and constructively sold at the most important point of contact:*** that is, on the highway where the driver is behind the wheel going somewhere.

A deathless highway can be achieved by beginning now to apply the proven safety education methods successfully used in industry to reduce accident frequency and severity rates. Here safety is fostered by consistent programs of on-the-job training and safety-selling through visual means. These procedures have established safety consciousness on the part of the individual which has rendered most plants using them safer than the home in which the individual lives or the street on which he walks or rides to work.

Simply by the use of sound sales techniques, in which the positive —never the negative—approach to safety is used, industrial workers are thoroughly sold on the idea. Moreover, an active and positive state of mind with respect to safety is created and maintained because the process of convincing safety-selling is a continuous one. It is carried out by colorful lighted displays and bulletin board posters bearing constant but acceptable reminders to work safely. A single safety idea is projected throughout a given plant at one time in short, readable, and fully comprehensible display messages. Besides building attitudes, these serve as constant reminders with amazing results.

Highway safety education through display had its humble if somewhat startling beginning with the White Cross that marked the spot of a fatal accident in Ohio many years ago. Its progress has been considerably slower than its seriousness warrants. It has been manifested quite notably through highway marking, curve signs, and warning signals adopted on most state and federal through highways, and is evidenced particularly in recent years, by traffic safety sign programs instituted by the police departments of a number of cities.

The truly safe highway, however, will be that modern, well designed and safely constructed strip on which the most advanced and proven methods of safety selling will be utilized. In terms of the motorist, on-the-job safety training means "at-the-wheel training" for as many who travel the highways as possible. It must incorporate widespread and efficient person-to-person instruction as now couducted by many public schools, automobile dealers, and other driver training agencies. It must include all other usual means by which, once a driver, one gains the immeasurable value of driving experience.

But, more than this is needed. Constant at-the-wheel training for even the most experienced motorist is a "must" to accomplish maximum safety results. Safe conduct behind the wheel of an automobile is a matter of safety thinking and awareness, and requires industry's safety repeat-selling technique.

Plant safety is a matter of complete statistical record with comparative data available for study and analysis. The same is generally true of highway safety data and much can be made of it in planning and programming the measures needed for tomorrow's safe highways. Because the solution is necessarily a long term endeavor, the start must be made forthwith by developing statistical records for designated stretches of highway in test areas for purposes of study.

Twenty-mile strips carrying fairly heavy traffic will be most desirable for this purpose, with safety-selling installations designed specifically for each. Location and appearance of the installations will be such as to enhance scenic values and at the same time bring to bear the at-the-wheel point of contact, the steady and beneficial influence of positive safety thinking.

Such tests should be instituted now, preferably by local, state and federal governments or suitable foundations. They would most certainly evolve into a nationwide pattern of at-the-wheel safety programming of immeasurable value, conceivably a further development and refinement of the present universal highway marking system.

Replacement of the distracting private selling billboards now along many highways with numbers of solid-selling safety displays could do much to bring down our highway death toll.

Safety Influences

ENGINEERS GATHERED for the spring meeting of the American Society of Mechanical Engineers heard a discussion of methods for influencing driver safety. Jesse Orlansky, vice president of the Stamford, Conn., consulting firm of Dunlap and Associates described a study his firm has made on two major highways, several military bases, traffic on country roads, and a number of different industries. Experiments were run in which various influences on accident behavior were set up: stop signs, patrol cars, and even a policeman pretending to write out a ticket to an offending motorist. Dr. Orlansky, who is a graduate psychologist, said that all of these measures produced immediate results in terms of increased safety, but that none of them was effective beyond two days.

The speaker listed four steps for a solution of America's highway toll of accidents:

1. Consistent and complete safety records should be kept.

2. These records must be evaluated by proper statistical methods which will permit us to interpret these data in terms of their rate (number of people involved, man hours, car miles, etc.) and variability (the number of cases on which they are based).

3. A conscious effort should be made to determine the effectiveness of aspects of the safety program, since it appears likely that some phases of current safety programs produce no obvious effect.

4. Special attention should be paid to studying undue practices as well as accidents, since there are elements in any safety program which do not show up as accident data, but which probably help to produce accidents.

Emergency Lights

THE AVERAGE person is better equipped to cope with a lighting emergency in his home than during a nighttime automobile mishap, according to a survey of the nation's emergency lighting equipment. In reporting results of the survey, Rodman St. Clair, general manager of the Electrical Division of Olin Mathieson Chemical Corporation, pointed out that half the motoring public carries no electrical emergency lighting equipment in their automobiles.

The survey was made in Kansas City, Mo. Nearly every resident (86.8 percent) has a flashlight in his home while only 51.6 percent carried them in their automobiles. The survey also found that only 58.7 percent of the population were confident their flashlights would light. The lack of concern in whether a flashlight might give light during an automobile or home emergency was shown by the fact that 53.4 percent of those queried hadn't tested their flashlights in a month.

An automobile emergency flash light or lantern should be capable of projecting a beam at least 700 feet. If a flashlight is used, Mr. St. Clair said, it should fit into a glove compartment. If a lantern is used, it should be attached to the cowl under the dashboard. A driver, stalled on a dark road, should not step out of his car without a hand light, he emphasized. Two extra batteries, or the number required for the emergency light, should be kept in the glove compartment.

Scholarships in Driver Education

ANOTHER IMPORTANT industry has come to the foreground in providing financial grants for training leaders in traffic safety. This is the Esso Safety Foundation, that had previously given grants to the Center for Safety Education at New York University for training driver educators, to the Yale University Bureau for Highway Traffic for training engineers, and to Northeastern University for courses for police and traffic court magistrates.

The foundation has recently added another grant of $15,000, to be divided among six colleges located in states in which the company operates. According to Dr. Herbert J. Stack, Director, this will provide for 145 scholarships of from $70 to $100 to high-school and college teachers of driver education to enroll in 60-hour intensive two-week training courses in driver education.

The co-operating colleges to be selected will be for the most part private institutions, in conformity with industry's desire to support private colleges. The six colleges will be located in regional centers so that travel expenses for students in the Esso states will not be high.

The New York University course for high-school teachers were held from June 6 to 18; for college teachers, from June 20 to July 1. Courses at other colleges will be announced as soon as arrangements are completed.

Answers to "How Do You Look at an Accident" on page 63

Now that you have passed judgment on these accidents, let's review the answer to see how well you made out. Don't be disturbed if you didn't get a perfect score. Very few safety men have! Each case should have been scored as a "preventable" accident.

5. Caused by our driver. The claim of being blinded by headlights is an admission that the driver was not properly using his eyes. By looking at the right edge of the road well beyond the oncoming vehicle, our driver could have offset the blinding effect of glaring headlights. When meeting blinding headlights, our driver should also slow down, so that he can retain control of his vehicle. Then by following the technique of riveting his eyes on a point to the right of the pavement and well beyond the oncoming vehicle, he will have no difficulty in meeting the blinding headlights, yet is able to keep cognizant of the oncoming vehicle out of the "tail of his eye."

6. Caused by our driver. Again the impulsive application of brakes erased any advantage to be derived from cutting the steering wheel. When the tires are sliding, the vehicle will faithfully follow the line of least resistance, which is usually a straight line.

inside the trade

John B. Davies, manager of industrial sales, *MINE SAFETY APPLIANCES COMPANY*, Pittsburgh, was elected president of the Industrial Safety Equipment Association at the group's recent annual meeting.

Mr. Davies, a graduate of Carnegie Institute of Technology, joined Mine Safety as a chemist in 1919, five years after the company was founded. Before assuming his present position, Mr. Davies was assistant sales manager. He is a member of the American Society of Safety Engineers, the American Industrial Hygiene Association, and the International Association of Fire Chiefs. He is a past president of the Veterans of Safety and a director of National Sales Executives, Inc.

ALAN WOOD STEEL COMPANY has purchased the Steel Equipment Division of Penn Metal Corporation of Penna. This division, which manufactures steel lockers, cabinets and shelving under the trade name "Penco", will be operated as the Penco Metal Products Division of Alan Wood Steel Company.

The purchase includes land, buildings, machinery and inventory. The division will continue operations in its present location at Oregon Avenue and Swanson Street, Philadelphia.

NUTTING TRUCK AND CASTER COMPANY, announces new warehousing facilities to serve users of materials handling equipment in the West Coast trade area. Located at 253 4th Street, Oakland 7, California, these new facilities include a complete stock of floor trucks, casters, wheels and replacement parts plus maintenance and repair service.

THE AMERICAN PULLEY COMPANY of Philadelphia has purchased from the Standard Pressed Steel Company of Jenkintown, Pennsylvania, the rights, tooling, equipment and inventory for the latter's line of pressed-steel platform trucks. By adding platform trucks to its Materials-Handling Division, American Pulley rounds out its line to include all types of manually operated materials-handling equipment.

Elmer F. Reske was elected President of the Society of Fire Protection Engineers at the Society's annual meeting. Mr. Reske is Manager of the Cook County Inspection Bureau, Chicago, Ill. Other officers elected at this meeting were First Vice-President, *William G. Schultz*, Chief Engineer and Assistant Vice-President, Lumbermens Mutual Insurance Co., Mansfield, Ohio; Second Vice-President, *James J. Duggan*, Superintendent of Mechanical and Fire Safety, Carbide and Carbon Chemicals Co., South Charleston, W. Va.; and Secretary-Treasurer, *Robert S. Moulton*, Technical Secretary, National Fire Protection Association, Boston, Mass.

THE HEWSON COMPANY, INC. announces the appointment of Mr. J. W. Wollett, 34 Sunnyfield Drive, R. D. 2., Bridgeville, Pennsylvania, as representative for sales, field application and servicing of its line of insulation test sets, static control systems, static alarm systems and automatic ground controls for West Virginia and western Pennsylvania.

BREUER ELECTRIC MFG. CO. has announced the appointment of *William R. McMillen* as Regional Sales Manager for the company in the southeastern United States. As in the past, he will headquarter in Atlanta and his territory will include Florida, Alabama, Georgia, North Carolina, South Carolina and Eastern Tennessee.

WHEELCO INSTRUMENTS DIVISION of the Barber-Colman Co. has announced the completion of a series of sales clinics. Extending over a four week period, the clinics appraised the expanding field of Automation, introduced new Wheelco Control products, and included a study of marketing problems and quotas. All of the branch office personnel from Wheelco's nation-wide Sales organization were in attendance.

Joe E. Tracey, of Denver, has been named Rocky Mountain Representative for the Industrial Products Division of the *PIONEER RUBBER COMPANY*, makers of industrial gloves. Pioneer officials stated that Mr. Tracey's appointment is the latest in a series designed to establish closer contact with distributors of gloves.

THE HAMMEL-DAHL COMPANY of Providence, R. I., manufacturers of automatic control equipment, announces the appointment of the MacGuire Instrument Company, 1200 Axtell Drive (Columbia), Cayce, South Carolina, as their new Sales and Service Representative in South Carolina, North Carolina and part of Virginia. *Mr. William J. MacGuire* is in active charge of the company's sales and service.

MINNESOTA MINING & MFG. CO. has announced the promotion of *Collin H. Alexander* to manager of research and development of the vapor coating group, reflective products division. This group developed 3M brand aluminum fabric finish which is used in garments as protection against extreme heat. Alexander, who joined the company in 1951, pre-

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1933 series is available in over 40 titles. 1¼ inches diameter, hard glazed enamel, heavily gold plated pin and safety lock catch. $10.50 per dozen (plus F.E.T.)

WILLIAMS JEWELRY & MFG. CO.
Dept. S8, 10 S. Wabash Ave.
CEntral 6-5018 Chicago 3, Ill.

(Use Key # H-30 on Inquiry Card on page 71)

For Safety
Guardi-Ann Hat
U.S. PATENT NO 135096

Combines utmost protection and style. Exclusive patented features found in no other hat.

Write for Free Sample or Order Direct from us

$15.00 dz.

CHIC MAID HAT MFG. CO., Inc.
630 HIGH STREET
BUFFALO 11, N. Y.

(Use Key # H-31 on Inquiry Card on page 71)

viously was associated with Bausch and Lomb Optical Co. in the vapor coating field.

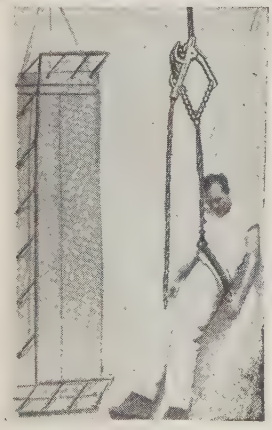
R. C. Coleman of Kansas City, Mo., long well known to the trucking industry, is now affiliated with "The Mid-West Truckman" magazine. One of the original founders of the *AMERICAN SAFETY TANK CO.*, he was granted leave of absence from 1942 until late 1945 to serve with the Office of Defense Transportation in Washington, D. C., and as Regional Director at Kansas City, Mo.

Mr. Coleman will continue to maintain his office at 3937 Main St., Kansas City, Mo. He expects to continue active in matters of safety and fire prevention for the trucking industry.

Glenn C. Vergne of Concord, Calif., has been appointed safety engineer of *TIDE WATER ASSOCIATED OIL COMPANY'S* Avon Flying A Refinery in Associated, Calif., it was announced by Oscar Larson, manager of the 1500 man refinery. Vergne succeeds Samuel O. Bacon, who has recently been promoted to safety engineer of the company's western division with headquarters in San Francisco.

Vergne has been with the oil company here since 1934. He was a foreman of the refinery's inspection department until his selection to be refinery safety engineer.

STOP THAT FALL



Safety Lifeline Lock

FOR SCAFFOLDS AND SWINGS

Locks automatically, instantly. Slips onto lifeline rope. Moveable up or down with man. Instant locking position at all times, whether stationary or being moved up or down.

Snaps into safety belt: No adjusting. Inexpensive. Overall length approx. 13". Does not harm rope. Weight: approx. 5 lbs.

Recommended for use on standard ¾" or ⅞" Manila rope.

Send for folder

SAFETY TOWER LADDER CO.

1024 BURBANK BLVD. PO BOX 1052

BURBANK, CALIFORNIA

(Use Key # H-32 on Inquiry Card on page 71)

ELECTRONICS CORPORATION OF AMERICA, Cambridge, Mass., announces the formation of Electronics Corporation of America (Canada) Ltd., with headquarters at 98 Advance Road in Toronto. *Mr. James S. Carlile*, who has been supervising ECA sales activities in Canada, has been appointed as general manager of the Canadian subsidiary which will handle Canadian operations of the Photoswitch Division, Combustion Control Division and Fireye Division of ECA.

The new Corporation will render all possible assistance to presently established ECA distributors in Canada and is establishing complete service and repair facilities at its Toronto headquarters.

Earl Harrah, a veteran of 25 years of service, has been assigned to new duties with the *B. F. GOODRICH COMPANY* Tire & Equipment Division as field safety supervisor. Assigned to the field personnel department, he will be responsible for accident prevention, fire prevention, good housekeeping, and safety training at all field locations of the tire and equipment division.

Harrah began his career at BFG as a foreman in the industrial products division. He later served as a conference leader in the Akron training department, and prior to his present appointment, as a safety advisor in the safety department.

Safety & Fire Courses

THE FOLLOWING courses in the fall term, 1955, are announced by The Center for Safety Education at New York University: SC–1 Accident Prevention—Its Background, Objectives, and Relationships; SC–2 The Philosophy and Basic Principle of Accident Prevention; SC–3 Industrial Hazards—Mechanical and Personal: Control Methods; SC–8 Fire Prevention and Protection Inspection; SC–9 Accident Prevention for Operators of Motor Vehicle Fleets: Organizing the Program; SC–11 Vision Improvement in Industrial and Motor Vehicle Operators; SC–14 Principles of Safety Inspection; SC–17 Marine Accident Prevention; SC–18 Industrial Safety Technology and Instrumentation; SC–19 Hotel and Guest Safety; SC–20 Hospital Accident Prevention.

These courses begin during the week of September 26th. Bulletins may be secured by writing Dr. Walter A. Cutter, Center for Safety Education, Division of General Education, New York University, New York 3, New York.

The Safety Shelf—

(Continued from page 49)

Warehousing Accidents

THIS report contains a detailed analysis of injuries, injury rates, and hazards for the commercial warehousing industry. Included are analyses of: 1. Injury rates by type of warehouse, geographic region, state, and occupation; 2. Nature of injuries and parts of body injured; 3. Agencies involved in accident and types of accidents; and 4. Accident causes.

This publication is for sale at 40 cents per copy from the following regional offices of the Bureau of Labor Statistics: 341 Ninth Avenue, New York 1, N. Y.; 105 West Adams Street, Chicago 3, Illinois; 630 Sansome Street, San Francisco 11, California; or from Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Earthmoving Book

"MOVING THE EARTH" is the title of an informative reference book on excavation and earthmoving by Herbert L. Nichols, Jr. The 1280-page encyclopedia includes over 2500 drawings, photographs and tables. The author stresses care and safety and offers suggestions for reducing hazards.

This practical reference work is in two sections. The first deals with "The Work" and includes chapters on clearing, rough surveying, soil and mud, cellars, ditching and drainage, ponds, landscaping, roads, blasting and tunneling, pits, and financial management.

The second part, "The Machine," describes in detail practically every type of earthmoving equipment, with chapters on: basic information, revolving shovels, conveyor machinery, tractors and bulldozers, tractor loaders, scrapers, dump trucks, grading and compacting machinery, compressors and drills, and miscellaneous machines.

The volume is available for $15 from the publisher: North Castle Books, 212 Bedford Rd., Greenwich, Conn.

Material appearing in this section is published as information for our readers and is not intended to imply endorsement or guarantee by SAFETY MAINTENANCE.

What's New...

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE

FINGER FILM BADGE

(Use Key # 972 on Inquiry Card on page 71)

FINGER FILM BADGES for measuring routine exposure to the hands or fingers of personnel working with or near radioactive materials or X-Ray equipment are announced as a new service by R. S. Landauer, Jr. & Co. Badges are furnished at weekly intervals. At the end of each week those which have been used are returned for processing and analysis. A complete exposure report is then promptly sent to the user.

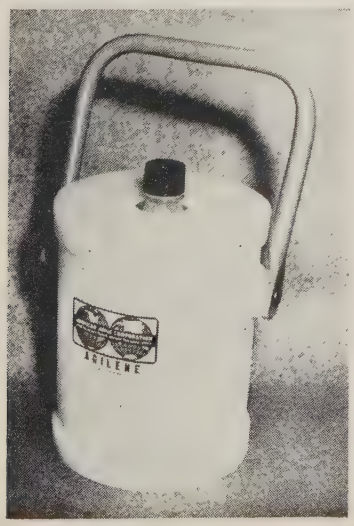
These badges are small, light, and water resistant. A flexible band makes possible nearly universal fit. The outer components and band are not reused thus preventing cross contamination. The unit is compact enough to be worn inside a rubber glove, where necessary.

PLASTIC BOTTLE-CARRIERS

(Use Key # 973 on Inquiry Card on page 71)

NEW SAFETY-TYPE bottle carriers fabricated entirely from polyethylene are announced by the American Agile Corp. These carriers protect acid or similarly-filled glass bottles or carboys from breakage. The unit shown is a standard model and holds a five-pint standard acid bottle. It is of welded construction with a centering ring which allows the bottle to be packed with ice or other coolerant and in addition, protects the bottle from shock.

Both impact capacity of the polyethylene material and the design of the carrier afford maximum protection to the container handled. Handles are strongly attached; and the top holds the mouth of the inner bottle in a centered position, even when pouring. In addition to its standard line of bottle carriers, units may be ordered according to individual specifications.



PORTABLE SAFETY BARRICADE

(Use Key # 974 on Inquiry Card on page 71)

STEEL SAFETY barricade features portability, light weight, and ease of assembly for all temporary detours, street repairs, marking danger areas, and protecting off-limits areas. Two folding "A" legs and a steel tubing cross bar lock together in a matter of seconds. Legs are held open positively by means of a patented locking device, and may be folded inside the bar for easy carrying or for compact storage.

Baked-on chrome yellow enamel finish assures high visibility at night or daytime for the E-Z Barricade. Safety signs may be hung on the cross bar for special warning situations. Made by Eastern Metal of Elmira, Inc., regular models have heights of over 3 ft. and are equipped with 4, 6, 8, and 10 foot cross bars, depending upon requirements. Regular 4 ft. model weighs only 11 pounds.

EXPLOSION-VENT PLASTIC WINDOWS

(Use Key # 975 on Inquiry Card on page 71)

EXPLOSION-VENT windows of extruded Tenite butyrate plastic are new aids to industrial plant safety. In the event of a blast caused by the sudden ignition of gas or air-borne dust, the flexible plastic panes will bow and pull away from the casings to effect a quick release of pressure. The tough panes, made by General Plastics Corp., will not shatter and thus eliminate the hazard of flying fragments.

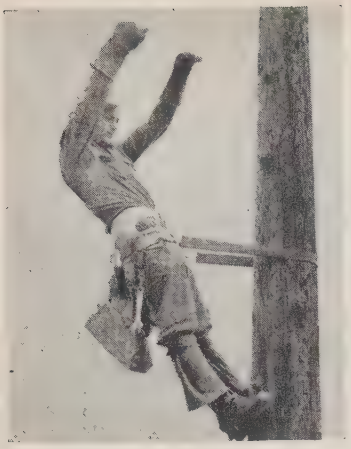
The new glazing material is transparent and the panes are cut to size from extruded sheet. Thin galvanized strips are crimped over all four edges of the tough plastic panes, providing a metal binding 3/8" wide. The metal edge gives added rigidity, and also facilitates glazing since it provides a good surface for putty.

HAND CLEANER

(Use Key # 976 on Inquiry Card on page 71)

AVAILABLE FROM Amaza Laboratories, Inc. is a hand cleaner for use with or without water. It is claimed that "E-Z-Go" will remove grime, putty, gum, tar, grease, carbon black, paint, varnish, inks, roofing and caulking compounds, etc.

The hand cleaner is said to contain no ammonia, alkaline salts or abrasives. A special antispetic and lanolin help prevent chapping and roughing of the skin. Available in either cream or liquid form.



BACK-SUPPORTING LINEMAN'S BELT

(Use Key # 977 on Inquiry Card on page 71)

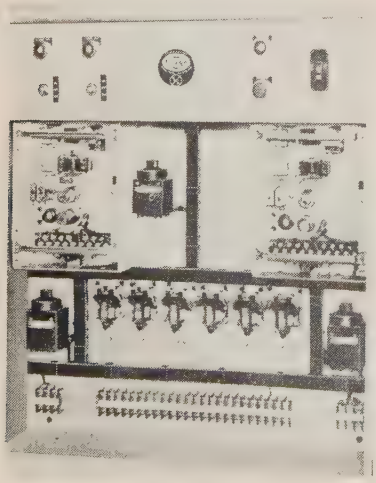
MILLER, well-known in lineman and industrial equipment fields for lifesaving equipment, has developed what it claims is the safest and most comfortable belt a lineman ever wore—the Miller Bak-Saver. Thoroughly tried and tested, this new belt eliminates the hazard of falling out of the saddle and therefore permits the lineman to be higher on his work. Because of this, he can now work further out from the pole with greater comfort and freedom.

This strong yet light-weight belt combines all of the protection of the safety belt with the comfort of a back support. The support portion of the belt is made from high quality russet strap leather and is ventilated for cool comfort. Tool saddle and dee saddle are made from russet steer harness leather for maximum strength. The design permits the belt to be worn in a low, comfortable position, firmly supports tool weight, and holds tool belt in proper position at all times.

BURNER CONTROL SYSTEM

(Use Key # 978 on Inquiry Card on page 71)

FIREYE INTEGRATED Control System is especially designed for safe lightup and operation of multiple-burner boilers. It consists of a prewired and tested Control Cabinet Assembly, as shown in the picture, plus all the necessary controls, timers, valves and accessories for a complete installation.



The system provides starting and operating flame-failure protection for one, two, three or four burners: gas, oil or gas-oil fired; manually or semi-automatically ignited. Flame failure protection is provided for each burner by two Fireye Type 48PT1 Scanners; one monitors the pilot flame and the other the main flame. The system does not allow the main fuel valve to open until the pilot flame is established. It makes mandatory a purge time of sufficient length to produce four air changes in the boiler, at the end of which time a green light flashes to show the operator he may continue the "light-off" procedure.

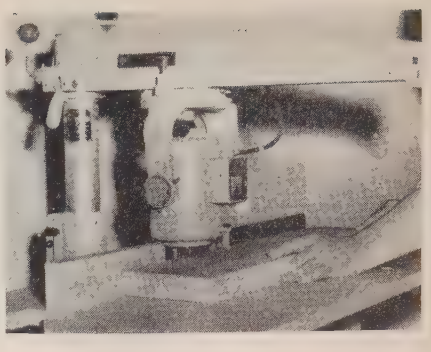
A timer limits the trial-for-ignition for each burner to ten seconds, after which time the fuel valve closes if main flame is not ignited. When a flame failure occurs at any burner during light-off or operation, an alarm-horn sounds and a red alarm light for that burner is illuminated. The alarm light remains on until the burner is restored to normal operation. A switch is provided for silencing the horn.

VARIED PRESSURE DRY CHEMICAL EXTINGUISHER

(Use Key # 979 on Inquiry Card on page 71)

A NEW 10-pound pressurized dry chemical fire extinguisher which carries Underwriters' approval for a pressure range of from 150 to 250 pounds has been announced by Walter Kidde & Company, Inc. The advantage of such a wide range of working pressures, according to Kidde engineers, is that the unit will work satisfactorily if only 150 pounds of air pressure is available. When pressurized to 250 pounds the extinguisher packs an extra hard hitting punch.

The unit features a pistol grip trigger release mechanism, a new dust and moisture-proof gauge which shows at a glance the unit's charged pressure. It also uses a diffuser horn which gives extra wide coverage of the discharge pattern for flammable liquid and electrical equipment fires.



SHAPER-JOINTER FENCE

(Use Key # 980 on Inquiry Card on page 71)

DEWALT INC., producers of woodworking equipment for industrial and homeshop applications, have introduced a new style jointer-shaper fence, replacing the standard wood guide when their radial-arm circular saw machine is to be used for shaping or jointing. With the motor in vertical position, and a shaper or jointer head attached to the spindle, the material is fed along the fence and through the cutting knives.

The height of the fence acts as a safety guard in protecting the operator from the moving parts of the machine which are positioned behind it. The long, rigid fence is supported at both ends, eliminating the possibility of "whip." Because the fence fits into the wood table top, there is an unusually large bearing surface for the stock.

FIRE RESISTANT HYDRAULIC FLUIDS

(Use Key # 981 on Inquiry Card on page 71)

TWO NEW fire-resistant hydraulic fluids engineered to meet special high and low viscosity requirements now are available in commercial quantities from Monsanto Chemical Company's Organic Chemicals Division.

The new fluids, trademarked Pydraul 150 and Pydraul 600, are reported to have the same fire-resistance, lubricity, non-toxicity and non-corrosiveness as the company's widely-accepted Pydraul F-9. They supplement the latter by providing different viscosities.

Pydraul 150, with a viscosity index of 170 and a pour point of –55 °F., is designed for use in outdoor installations, primarily within the steel industry, where systems are exposed to low ambient temperatures. Installed in an Askania regulator on a major steel company's blast furnace, the fluid recently proved self-extinguishing when broken lines poured 350 gallons of it into flames hot enough to melt the system's brass fittings.

At the opposite end of the viscosity range, the new Pydraul 600 has a viscosity index of 30 and a pour point of 15 °F. Designed for presses, compressors and die-casting equipment, its S.U.S. viscosity of 625 at 100 °F. compares with 220 for Pydraul F-9 and 150 for the new Pydraul 150.

(Continued on page 73)

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

MISCELLANEOUS

Signs for Safety 345
Ready Made Sign Co. New 48-page catalog illustrates in five colors a wire variety of industrial, commercial and highway safety signs, made in accordance with the A.S.A. code. Catalog is well indexed by subject.

Electrical Control System 346
Security Controls, Inc. This illustrated bulletin describes an electrical control system for predetermined repeat or non-repeat cycle on presses or other machines with a mechanical tripping mechanism.

Machine Eye Shield 347
Junkin Safety Appliance Co. Illustrated bulletin describes illuminated or non-illuminated eye shields for use on pedestal and bench grinders. Points out that the shields are completely adjustable.

Flexible Pipe Connections 348
T. R. Finn & Co., Inc. Complete line of flexible pipe connections to solve vibration and expansion problems in industrial and process piping is shown in this 12-page catalog, which gives pressure and temperature ranges, dimensions, specifications, selection factors, and installation procedures.

Electrical & Lubricating Devices. 349
Trico Fuse Mfg. Co. An 8-page condensed catalog offers electrical fuses, fuse pullers, reducers, test & fuse clip clamps. The lubricating section includes a wide variety of automatic oiling devices for machinery.

Flame Retardant 350
Grasselli Chemicals Div., E. I. duPont de Nemours & Co., Inc. An informative 16-page booklet gives product data on "X-12" flame retardant for use on fabrics and paper. Contents includes outline of the chemical's physical characteristics, uses, general procedures, applications, testing of treated materials, etc.

Ammonia Detecting Paper 351
Allied Chemical & Dye Corp. A free pocket-size booklet of paper strips for locating ammonia leaks. The paper is treated with phenophthalein. Dampened with water, the strips turn red in the presence of ammonia.

Asbestos Textiles 352
Johns-Manville. This illustrated 16-page manual is primarily for designers and purchasing agents in concerns utilizing asbestos textiles in their products. It covers cloth yarn, lap, roving, tubing, cord, wick, rope and tape.

Cold Immersion Solvent 353
Curran Corp. A self-emulsifying and self-scouring solvent for decarbonizing engines and components is described in this 2-page bulletin. Gives full data on function and uses of the cold immersion solvent, methods of use, and precautions.

Safety Trim-Board 354
Zeus Rolcut Co. Well-illustrated 4-page folder describes a paper and film trimming board that utilizes a fully enclosed, circular-wheel cutting blade instead of a chopper blade. Shows safety features for offices, drafting rooms, printing and industrial uses.

PERSONAL PROTECTION

Non-Fog Lens Tissues 355
Carhoff Co. A 4-page bulletin, illustrated, describes cleaning tissues that are chemically treated to clean lenses and windshields and make them fog-proof. Bulletin also shows inexpensive brackets for mounting a carton of tissues and water-spray bottle.

Gloves and Garments 356
Syracuse-Eldridge Co., Inc. Very well illustrated catlog of 12 pages shows a line of protective clothing made from leather and asbestos. Includes several styles of welders' gloves, sleeves, aprons, jackets, spats; heavy, general and special duty gloves and hand protectors; and also coated and canvas gloves.

Self-Contained Respirators 357
Mine Safety Appliances Co. This 4-page bulletin illustrates and describes an approved self-contained breathing apparatus for either oxygen or air. Bulletin outlines features of the equipment and details its uses.

Insulated Safety Shoes 358
Record Industrial Co. Illustrated bulletin features an insulated safety shoe to keep feet warm, dry and safe in outdoor work. Also shown are a safety indoor work shoe and a women's safety-toe saddle shoe.

Foot, Toe & Shin Guards 359
Ellwood Safety Appliance Co. Illustrated folder gives data on a variety of aluminum, steel and fibre guards, designed to be worn over shoes or clothing for the protection of toes, feet, shins and knees. Units can be worn separately or in combination.

MAINTENANCE

Chemical Specialties for Industry 360
Huntington Laboratories, Inc. This new 36-page booklet lists scores of new sanitation products to meet today's changing demands as well as standard maintenance and floor finishing items. Among newer products are: conductive wax, indicator soaps, medicated soaps, flame-retarding compounds, plastic stain removers, lubricant base soaps, etc.

Chemical Rust Disintegrator 361
Service Industries. A liquid solution that removes rust chemically and fortifies metal against further rusting both indoor and out is featured in this 4-page bulletin. The folder also describes a rust preventive for indoor use, a heavy duty preventive for outdoor use, and an acid-proof plastic coating.

(Continued on next page)

MAIL POSTAGE PAID CARD FOR MORE DATA

SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE.

READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

ADVERTISED PRODUCTS: Just insert the key number shown under each advertisement in the boxes below.

NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item.

FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

August, 1955

Please send me the following free data (Remember to fill in your name and address

PLEASE PRINT

Name _____ Title _____

Company Name _____

Street Address _____

City _____ Zone _____ State _____

Free Bulletins (Cont'd)

NOISE CONTROL

Audiometer Instruction Manual .. 362
Beltone Hearing Aid Co. A pocket-size 16-page booklet which gives basic data on the use of audiometers for testing hearing. Subdivisions of the manual cover: testing conditions, audiometer controls, tests, air conduction tests, bone conduction tests, masking tone, screening tests, individual screening, group screening, fuse replacement.

Noise Simplified 363
Hermon Hosmer Scott, Inc. A detailed 18-page booklet contains information on noise measurement and control. It explains the relation of noise to hearing, describes noise measuring instruments and shows how to use them. The second section discusses methods of reducing and controlling noise. Final section gives technical data on sound measurement equipment.

Sound Barrier Curtains 364
Bemis Bros. Bag Co. Illustrated bulletin describes a fire-resistant accordion-type curtain that can be used to deaden production noise and isolate noise sources. Shows how curtains are installed and typical applications.

FIRST AID & HYGIENE

Self-Sealing Bandage 365
Caster Products Co. This bulletin describes and illustrates a self-sealing bandage for use in first aid rooms, hospitals, clinics, etc. The porous latex crepe material is easily removed without sticking to skin or hair.

Athlete's Foot Preventive 366
Onox, Inc. A foot mat saturated with a special skin-toughening solution to build up the skin's resistance to fungus attack is described in this folder. Gives details about product and outlines free trial offer.

Flexible Exhaust Hose 367
Flexaust Co. A series of five bulletins describe various aspects and uses of flexible hose for dust & fume control, air conditioning and materials handling. They cover general data, accessories, technical data, application data and friction loss data.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protection Clothing
109	Safety Belts
110	Safety Gloves
111	Foot Protection
112	Anti-Slip Soles
113	Oil-Proof Soles
114	Welding Helmets
115	Welding Curtains
	FIRST AID AND PERSONAL HYGIENE
120	Protective Skin Cream
121	Skin Cleansers
122	Sanitary Drinking Cups
123	Athlete's Foot Control
124	Salt Tablets
125	Noise Analysis & Control
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Resuscitators
	DUST & FUME CONTROL
135	Portable Ventilator
136	Dust & Fume Collectors
137	Carbon Monoxide Control

Key Number	Subject
	FIRE PROTECTION
140	Fire Extinguishers
141	Safety Cans
142	Extinguishing Ashtray
143	Safer Solvents
144	Degreasing Machines
145	Combustion Safeguards
146	Flammable Liquid Pumps
147	Fire Retardants
	LIGHTING & ELECTRICAL EQUIPMENT
150	Alarms & Warning Lights
151	Explosion-Proof Lights
152	Electrical Insulation Tester
153	Fluorescent Lamp Guards
	FLOOR & BUILDING MAINTENANCE
160	Anti-Slip Floors & Mats
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Cleaning Machines
164	Oil & Grease Absorbents
165	Paints
	LADDERS & SCAFFOLDS
170	Ladders & Safety Devices
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	GUARDS
175	Machine Guards
176	Power Press Feeders
	EDUCATIONAL AIDS
180	Safety Signs
181	Aisle Marking Equipment
182	Safety Awards & Emblems
183	Employee Safety Guide

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NEW YORK 38, N. Y.

Service Dept.

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NEW PRODUCTS,

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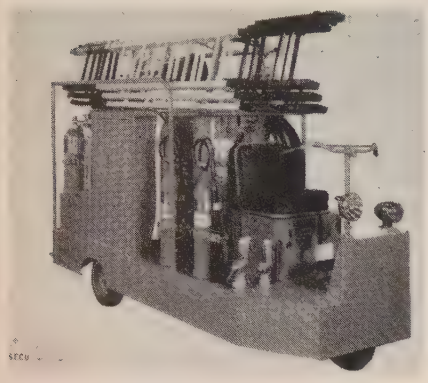
WHAT'S YOUR PROBLEM?



IN-PLANT FIRE TRUCK

(Use Key # 982 on Inquiry Card on page 71)

THE SECO Engineering and Manufacturing Company, Inc. has devised a new industrial motorized Fire Truck for plant protection. The new In-Plant Fire Truck is designed for use in any type of plant including chemical, metal working, textile, plastic and woodworking. It combines versatility, speed and maneuverability in areas difficult of access. Each of four basic models carries at least two major "Fire Fighting Guns". Model S200 is equipped with 300 pounds of carbon dioxide and a water fog unit.

ALUMINIZED FIRE SUIT WITH BREATHING UNIT

(Use Key # 983 on Inquiry Card on page 71)

A NEW ALUMINIZED fire suit has been announced by Wheeler Protective Apparel, Inc. for fire rescue workers and incorporates an air respirator which enables the worker to breathe for extended periods of time while inside the suit. The suit is intended for such users as air stations, animal breeding farms, armed service bases, auto speedways, factories, fire stations, institutions, stables, ships, yachts, stock yards, and other places where fire rescue may be necessary.

The "Fire King" is made from aluminized tropic-weight asbestos fabric which reflects up to 90% of the heat generated in the fire, permitting rescue even in direct flame. The lining is of neoprene coated fiberglas for additional resistance to heat, abrasion, water, oil, grease and acids. This also forms an effective vapor barrier. There is a built-in Bullard hard hat to protect the wearer from head blows. A pyrex vision piece in the helmet is replaceable and is ventilated to prevent fogging.

All outside seams are concealed and inside seams are of flame-proofed tape. A two-way zipper along with takeup springs at the waist and ankles saves time in putting on the suit. The suit will fit the average height range (5'8" to 6'2"). It comes packed in a steel storage case.

The Scott Air Pak, self-contained breathing equipment, is worn underneath the suit and provides enough air for approximately 15 minutes work inside the suit at extreme exertion. The Air-Pak offers protection against gas, smoke, dust, or fumes and will operate successfully in temperatures as low as 20 below zero. Cool air, not oxygen, is used in the Air-Pak, making for safer operation in flames. Operation of the unit is relatively simple.

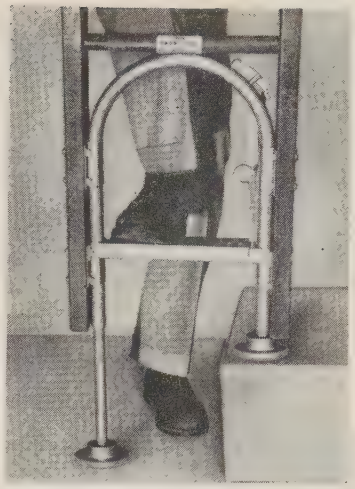
Also available are fire blankets and extra gloves for helpers. Extra air tanks can be obtained for the Scott Air-Pak; making it possible to have full air tanks on hand at all times, while the used ones are being recharged.

NOISELESS VACUUM

(Use Key # 984 on Inquiry Card on page 71)

THE NEW TORNADO Model 240 Noiseless Vacuum Cleaner is a combination of power supplied by a heavy-duty multiple-stage 1 H.P. motor and scientifically designed noise suppression and dissipated air discharge to reduce operating noise level. The machine uses an internal type filter. The by-pass type of motor lets cooling air move through the motor and out without coming in contact with the dirt and moisture-laden suction air.

For wet pickup, the cover is raised and the filter removed. Available with a 15-gallon stainless steel tank or a 12-gallon baked enamel tank. Other features include a water shut-off valve for safety in wet pickup, a snap lock pin for quick hose connection, double ball bearing casters with non-marking neoprene wheels.



LADDER LEVELER

(Use Key # 985 on Inquiry Card on page 71)

A SAFETY DEVICE that is said to eliminate most of the accidents in using ladders has been put on the market by H-B Industries, Inc. Called "Ladr-Levl," it is easily attached to any ladder, wooden or metal. Its self-adjusting legs adapt themselves to any terrain, no matter how uneven, and permit the ladder to stand upright securely. Slipping is prevented by non-skid, swiveling feet. For use on stairways or steps, its legs take a full 9½" riser.

When the user puts his weight on the first rung, the mechanism locks automatically in place, and can be unlocked only by hand. The Ladr-Levl has been use-tested for a number of years by painters, glaziers, contractors, electricians, public utilities, maintenance men, outdoor advertising firms, and construction companies. It has been in rigorous daily use under the supervision of university research workers to test its safety and dependability.

Other important advantages are: the weight of the ladder is always directed downward along the side rails, eliminating lateral stresses; it can be easily installed by the purchaser, and can be transferred from ladder to ladder. It eliminates makeshift, unsafe leveling devices, such as wood blocks or bricks. It is manufactured to a minimum 1,000 lb ladder load test, is fabricated of a special aluminum alloy, and weighs only 5 pounds. It is guaranteed for a full year.

RADIATION & BURN TREATMENT

(Use Key # 986 on Inquiry Card on page 71)

AN OINTMENT made from the sap of the tropical Aloe vera plant, lanolin and petrogel, is now available for industrial clinics in treating burns of all kinds. Known as Collins Aloe Ointment, its original application was in the treatment of roentgen-ray burns. Subsequent tests indicate it is effective in the treatment of other burns due to radiation exposure, such as atomic ray, beta-ray, X-ray, gamma-ray and the sun's rays, as well

as chemical, hot metal, electrical, steam and abrasive burns.

According to research reported by Drs. C. C. Lushbaugh and D. B. Hale of the Los Alamos Scientific Laboratory, the ointment is the most satisfactory and successful remedy for the treatment of the devastating skin and tissue damage caused by atomic bomb explosions and in the treatment of burns resulting from exposure to beta irradiation.

Made by Collins Laboratories, Inc., the Aloe Ointment is available in 12 oz. jars designed especially for industrial clinics and hospitals. Trial 1 oz. tubes are also available at low cost.

HANDY USE MALLETS

(Use Key # 987 on Inquiry Card on page 71)

SEVEN DIFFERENT sizes of wooden mallets for production and maintenance work are offered by LaPierre-Sawyer Handle Co. Sizes range from 1¾ to 3½ inch diameter heads. Made of Pure Seal Brand Hickory, including the handles, they are designed to last many times longer with safety for tinners, plumbers, maintenance men, precision work, electricians, woodworkers, etc. The eyes of the handles were made to fit tight and are glue-dipped before driving into heads. They are coated with a clear lacquer and each size has a different colored tip on the handle.

NEW CONCRETE FINISH

(Use Key # 988 on Inquiry Card on page 71)

A NEW MULTI-PURPOSE concrete sealer-finish has been developed by the makers of Johnson's Wax. The new product, called Conq-r-Dust, is for use on cured or uncured concrete and other masonry-type floors. It is designed to eliminate dusting on concrete floors and make sweeping and other care easier. No floor neutralizing is necessary on uncured concrete. The product dries in 20 to 30 minutes and can be maintained by mopping with a weak cleaning solution.

The product can be applied as it comes from the container with no preparation or mixing required. It also is water resistant and provides a good gloss to improve the appearance of the floor. Wax or paint can be applied over it and resilient floors can be laid over it. It is slip-retardant, has practically no odor and is nearly colorless.

SAFETY PROMOTION KIT

(Use Key # 989 on Inquiry Card on page 71)

TO ENCOURAGE industrial workers to attain safety goals, a guide to Safety Promotion has been developed by Organization Services and will be sent without charge to readers. Some of the new approaches include safety calenders, various safety novelties, safety ribbon sets with a special slogan for each month of the year (shown here), all available from the company. One novel promotion idea is a safety totem pole which shows safety campaign rivalry between various departments.

SAFETY PRESCRIPTION GLASSES BY MAIL

(Use Key # 990 on Inquiry Card on page 71)

WALLACE OPTICAL CO. has recently put into effect a wider distribution plan for their Wallace Eyeguard prescription glasses. Interviews in plants throughout the country, especially those somewhat removed from major industrial centers, indicated a definite need for a faster, better safety prescription service.

The company feels that their experience in serving the exacting requirements of the automobile plants makes possible the successful servicing of accounts anywhere, through the mails. As Bausch & Lomb Distributors, they use B & L materials in the fabrication of all their safety prescription glasses.

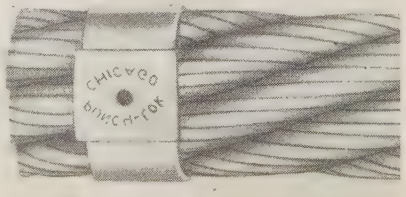
A strong appeal to welders and grinders is made by the company's claim to supply lenses that will last up to seven times longer than usual, by virtue of a crystal clear coating called TUF-COTE, that resists the burning and pitting normally encountered in these occupations.

HOSE CLAMP USED FOR SEIZING WIRE ROPE

(Use Key # 991 on Inquiry Card on page 71)

A QUICKER, tighter seize for cutting wire rope can be obtained using Punch-Lok hose clamps made by the Punch-Lok Company, according to the clamp manufacturer. Cutting wire rope without first seizing it securely, can throw it out of fabricated position and result in kinks or doglegs.

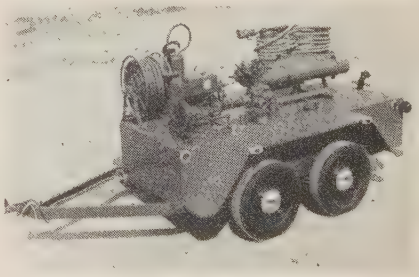
Seizing with hose clamps prevents movement of the strands during cutting operation. On stress-free preformed rope only one clamp is needed on each side of the cut. Clamps can then be removed or left as a permanent seize if needed.



NEOPRENE SHOE SOLE

(Use Key # 992 on Inquiry Card on page 71)

A DRESS-TYPE neoprene industrial sole has been introduced by the Gro-Cord Rubber Co. The "Neo-Nuclear" sole is a long-wearing stitchable material that has all the desirable and proven features of the conventional neoprene sole including resistance to oil, heat, acids and caustics. It was developed to fill the needs of plant executives, foremen and others who must work in both office and plant and who need a sole that withstands plant conditions and still looks dressy enough for the office.



FIREFIGHTING TRAILER

(Use Key # 993 on Inquiry Card on page 71)

HENRY H. PARIS Distributor, Inc., has recently placed on the market a completely self-contained firefighting trailer. The steel body of the trailer carries 360 gallons of water. It has 4 wheels, mounted on 2 level load axles to provide knee-action and smooth traveling. The low center of gravity makes it practically impossible for the trailer to overturn.

The top sides and fenders are made with non-slip steel floor plate for safety. Mounted atop the trailer body are a high volume, high pressure pump; hose reel; 100 ft. of 1" high pressure hose; 150 lb. dry chemical tank with 50 ft. of hose; 30 lb. hand extinguisher; valves and all

controls. Thirty feet of 2½" suction hose is carried in a special compartment at the rear of the trailer.

The valve and piping arrangement permits pumping water from the trailer tank, or picking up water from a pond, reservoir, stream, or directly from a fire hydrant. Water can also be taken from these sources to refill the tank. The dry chemical tank is pivot mounted so that it can be raised to an upright position, and latched in place, for refilling. The trailer is equipped with electric brakes, rear and side lights, and quick latching safety hitch.

ALL-PURPOSE ABSORBENT

(Use Key # 994 on Inquiry Card on page 71)

THE TRU-SORB CORP. recently introduced on the market a new, quality, all-purpose, mineral floor absorbent called "Super Tru-Sorb" which carries the Underwriter's Laboratories seal of approval. It has powerful absorbent qualities which will dry slippery and hazardous floor areas rapidly, making them clean and safe.

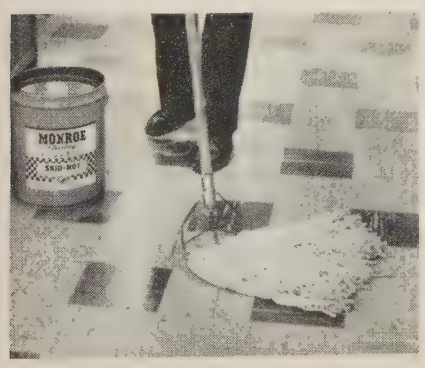
Based on performance tests conducted by a major scientific testing company, the product is said to absorb more liquid and retain its bright color when saturated. It will also cover more floor area due to its combination of low specific gravity with the proper grain size.

The new absorbent is completely harmless to those who use it and it does not damage clothes or floors as it is non-toxic, chemically inert and non-combustible. It is a universal floor absorbent in that it absorbs oil, water, grease, chemical solutions, paints, acids, inks, food wastes and other liquids. It is ideal for use in industrial and chemical plants, machine shops and garages, passenger and freight terminals, bottling plants, institutions, public buildings and parking lots, etc.

NON-SKID PLASTIC FINISH

(Use Key # 995 on Inquiry Card on page 71)

IMPROVEMENTS in its "Skid-Not" colorless liquid plastic floor finish that makes it easier to apply as well as skid-resistant, even when wet, are announced by The Monroe Company, Inc. New ingredients have produced a glossier, self-leveling finish that will not pile up or streak. The liquid plastic can be easily applied with mop or applicator. It dries within 20 minutes and is claimed to wear 3 to 5 times longer than wax. Completely transparent, it does not, in any way, change the color of flooring.



It is recommended for use over asphalt and rubber tile, linoleum, cork, terrazzo, magnesite and varnished, painted or enameled wood floors. When used after Monroe Wax and Oil Remover, it can be effectively applied over floors that have been previously waxed or oiled. It is especially suitable for offices, manufacturing plants, churches, restaurants, gymnasiums, theaters, public buildings and hospitals. Rubber skid marks and traffic stains can be easily washed off. It is noncombustible and nonflammable.

IMPROVED SOUND LEVEL METER

(Use Key # 996 on Inquiry Card on page 71)

A NEW, IMPROVED model of the 410 Sound Level Meter has been announced by H. H. Scott, Inc. This new model, the 410-C, features a separate output stage for driving sound analyzers, peak noise indicators, graphic level recorders, and other accessory equipment. This makes unnecessary the switching off the 410 indicating meter movement to avoid introducing distortion caused by the rectifying action of the indicating meter. Circuit changes have also been made to improve the operating characteristics.

The 410-C is used for accurately measuring noise, sound and vibration from equipment such as blowers, ventilating fans, or aircraft and in industrial hygiene studies and acoustical surveys.

This instrument features a very rugged, compact design. Unusual portability is made possible by the use of subminiature tubes and components, and patented miniaturization techniques. The meter meets all specifications of the American Standards Association for Sound Level Meters. The sound level range is from 34–140 db above the standard ASA reference level of .0002 dynes per square centimeter. It uses readily obtained hearing-aid batteries with an operating life of about 50 hours and is available with a wide range of accessories, including vibration measuring equipment, acoustic calibrator and peak noise indicator.

SAFETY SLOGAN CUPS

(Use Key # 997 on Inquiry Card on page 71)

THE DIXIE CUP CO. offers an attractive, effective series of safety design messages on its various types and sizes of Dixie Water Cups. The designs and slogans have been developed carefully to give them a strong impact upon the users of the product on the job.

Each time workers pause for a drink of water, they are subjected to a safety message, thereby helping to keep safety foremost in the minds of the workers. In addition, it has been found that industrial workers need to drink enough water on the job to combat fatigue dizziness and to maintain their best working efficiency. The use of sanitary drinking cups at all water coolers encourages the water drinking program.

Thirty-six different safety messages printed in a series, and assorted within a tube, are available at no increase in cost.

SILICONE SKIN CREAM

(Use Key # 998 on Inquiry Card on page 71)

A NEW siliconized formula that the manufacturer claims gives double the effectiveness is now being offered in Go-Jo Protective Skin-Coat. The product reduces industrial dermatitis by developing a protective barrier to prevent infectious ingredients from penetrating the pores of the skin. Upon application, it protects hands like an invisible glove, retaining hard-to-remove ingredients on the surface and stopping penetration of grime, paint, inks, carbons, adhesives, detergents, etc. Samples available from Gojer, Inc.

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Auxiliary Filters

PREVENT CLOGGING OF CARTRIDGES

Auxiliary cellulose filters, now available for the CESCO No. 99 ORGANIC VAPOR RESPIRATOR, prevent the clogging of cartridges during paint spraying operations. Together with the dual 85 cc cartridges they provide high absorptive capacity and low resistance to breathing.

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CESCO

CESCO FOR SAFETY

(For details, use Key # H-33 on card on page 71)

MERCUROCHROME®

for first Aid

Neglect may cause infection, which can be prevented by prompt use of Mercurochrome.

No antiseptic has been proved to be more effective than Mercurochrome.

Thirty-four years of extensive clinical and lay use has proved the value of this popular antiseptic.

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Thantis Lozenges relieve pain promptly—reduce infection—act prophylactically.

Sore throats due to coughs and colds, if neglected, may result in lost man hours of work.

HYNSON, WESTCOTT & DUNNING, INC., BALTIMORE 1, MARYLAND

(For details, use Key # H-34 on card on page 71)

KANSAS CITY, MO.
PUBL
SEP 12 1955

Safety Maintenance and Production

EST. 1901 • AMERICA'S PIONEER MAGAZINE IN ITS FIELD • 50¢ • SEPTEMBER, 1955

Eye Protection

2 Outstanding

AO-Engineered Coverglas Goggles

. . . one for Chipping, the other for Welding

326A for Chippers. Available with transparent cups as 328A, and with rigid adjustable bridge as 326R.

These cup goggles solve practically all fitting problems for Chippers and Welders who wear personal prescription glasses or prescription safety glasses — with or without side shields.

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327A for Welders. Available with adjustable rigid metal bridge as 327R; with rigid bar bridge as 327B.

QUICK FACTS

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RETAINING RING — New type snap ring is easily inserted from rear. Prevents lenses from being forced out of back of goggle. Gives lenses a cushioning effect on impact.

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HEADBAND — New, all rubber, easily adjustable by pulling headband through slots at ends of eyecups.

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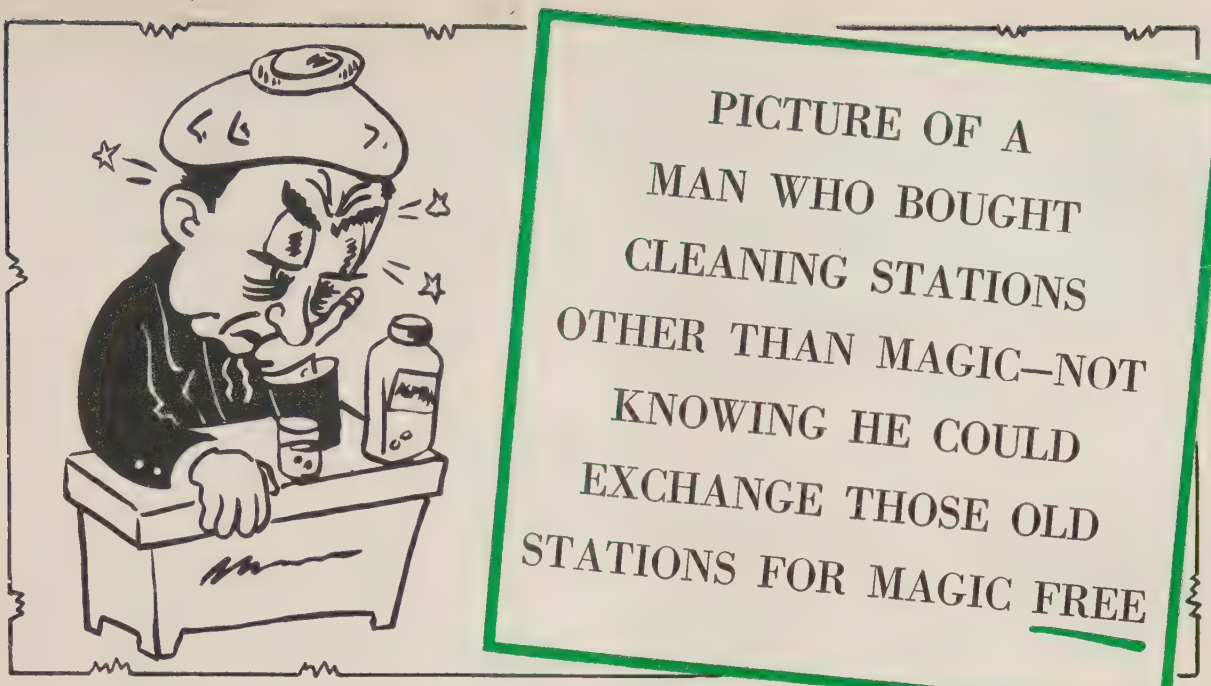
SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS • BRANCHES IN PRINCIPAL CITIES

(For details, use Key # J-1 on card on page 73)



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MAGIC LENS DISPENSER $2.50 each

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Cleaning Station

MAGIC HEAVY-DUTY
Cleaning Station

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(12—12 oz. cans) $12.50 per carton

HEAVY-DUTY PAPER
(18 giant refills 760 sheets each) $11.60 per carton

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Magic

CLEANING STATIONS

The Silicone Paper Company of America, Inc.
General Offices: 75 E. 45th St., New York 17, N. Y.

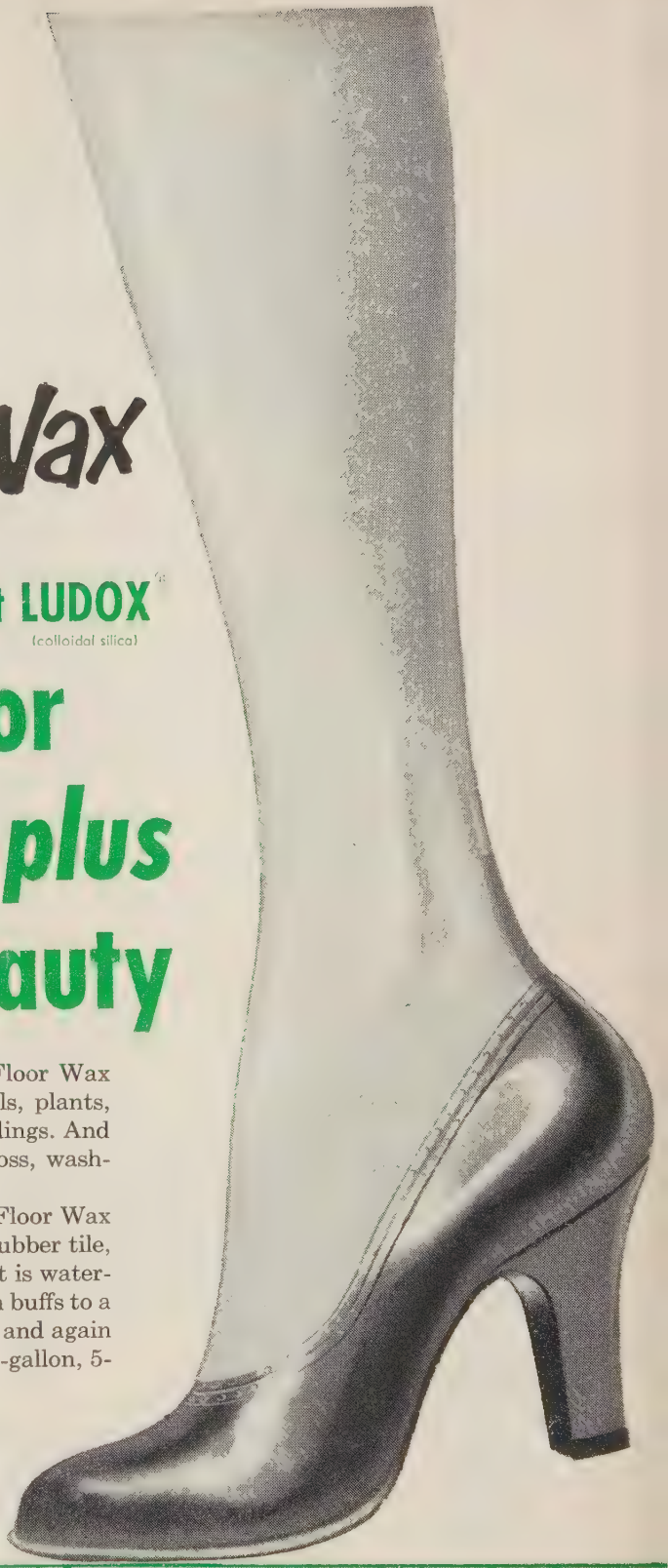
(For details, use Key # J-2 on card on page 73)

Published by Alfred M. Best Company, Inc., Publication Office, Columbia Turnpike, Box 232, Rensselaer, N. Y. Editorial and General Offices, Best Building, 75 Fulton St., New York 38, N. Y. Entered as Second Class Matter at Post Office at Rensselaer, N. Y. Under Act of March 3, 1879. Subscription rates, $4.00 Per Year in the United States; $5.00 in Canada; Foreign, $5.00. Single Copies, 50 cents. Publication Date 1st.

New Du Pont Safety Floor Wax

with slip-retardant LUDOX®
(colloidal silica)

gives superior slip resistance *plus* long-lasting beauty



The anti-slip protection of new Du Pont Safety Floor Wax brings a new measure of safety to floors in schools, plants, hospitals, stores, restaurants and other public buildings. And it gives this vital extra security *along with* full gloss, washability and extra-long life!

A premium slip-retardant wax, Du Pont Safety Floor Wax gives long-lasting beauty to linoleum, asphalt tile, rubber tile, vinyl tile and any other resilient floor covering. It is water-resistant—dries to a satin gloss in 20 minutes, then buffs to a high shine. Can be damp-mopped and buffed again and again with no loss in anti-slip protection. Available in 1-gallon, 5-gallon, 30-gallon, and 50-gallon containers.

• • •

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DU PONT
REG U.S. PAT OFF

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(For details, use Key # J-3 on card on page 73)

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Safety Maintenance and Production

formerly "SAFETY ENGINEERING"

Volume 110, Number 3 **September 1955**

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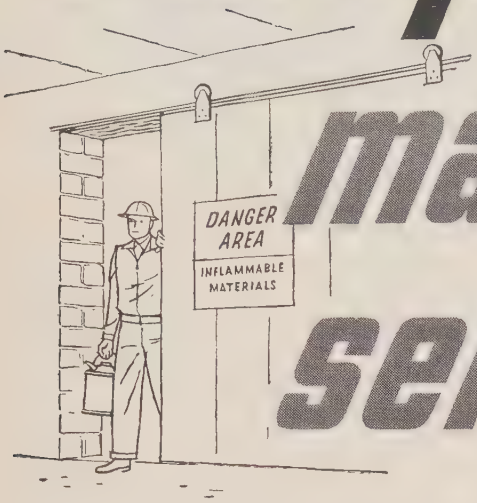
Cover Picture by Courtesy of "Steelways"

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

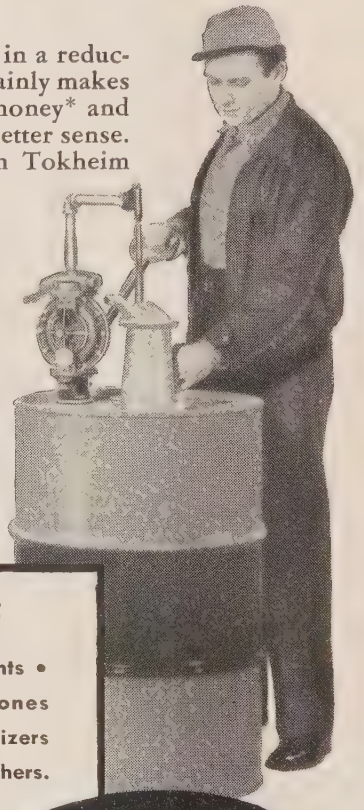
Pumping makes sense



Any plant improvement that results in a reduction of fire and accident hazards certainly makes sense. If such improvement saves money* and helps housekeeping, it makes even better sense. This is exactly what happens when Tokheim Transfer pumps are put into service.

Pouring, drawing or siphoning industrial liquids are outmoded, dangerous practices. Correct them with Tokheim pumps. There is none better, none more versatile. Easily installed in drums, pipe lines or underground tanks. Long-lived, inexpensive. Many models. See your dealer, your Tokheim representative or write factory for catalog today!

* The use of Tokheim pumps often earns a lower insurance rate.



pumps many liquids

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General Products Division

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Factory Branch: 1309 Howard St., San Francisco 3, California

Canadian Distributor: H. Reeder, 205 Yonge St., Toronto, Ont.

Gasoline Pumps and Accessories • Air and Liquid Dispensers • Specially Engineered Products

(For details, use Key # J-4 on card on page 73)

Portland, Ore. *September 12–13*

The Second Annual Pacific Northwest Industrial Health Conference (Multnomah Hotel). R. Walter Ager, attendance chairman, Pacific Northwest Industrial Health Conference, 824 S. W. 5th Ave., Portland, Ore.

Cleveland, Ohio *Sept. 13–15*

Seventeenth Annual Ohio State Safety Conference and Exhibit (Hotel Carter). Michael L. Stefani, General Manager, Cleveland Safety Council, 2073 E. 9th St., Cleveland 15, Ohio.

York Harbor, Me. *September 15–16*

Twenty-eighth Annual Maine State Safety Conference (Marshall House). Arthur F. Minchin, Secretary, Department of Labor & Industry, State House, Augusta, Me.

Chicago, Ill. *Oct. 17–21*

Forty-third National Safety Congress and Exposition (Conrad Hilton and other hotels). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Charleston, S. C. *November 3–4*

Eighteenth Annual South Carolina Accident Prevention Conference (Francis Marion Hotel). J. Donald Watson, Jr., Secretary-Treasurer, P. O. Box 539, Columbia, S. C.

Kansas City, Mo. *November 14–18*

Eighty-third Annual Meeting of the American Public Health Association and related organizations (Municipal Auditorium). Dr. Reginald M. Atwater, executive secretary, American Public Health Association, Inc., 1790 Broadway, New York 19, N. Y.

SEND THIS PERSONAL SAFETY MESSAGE

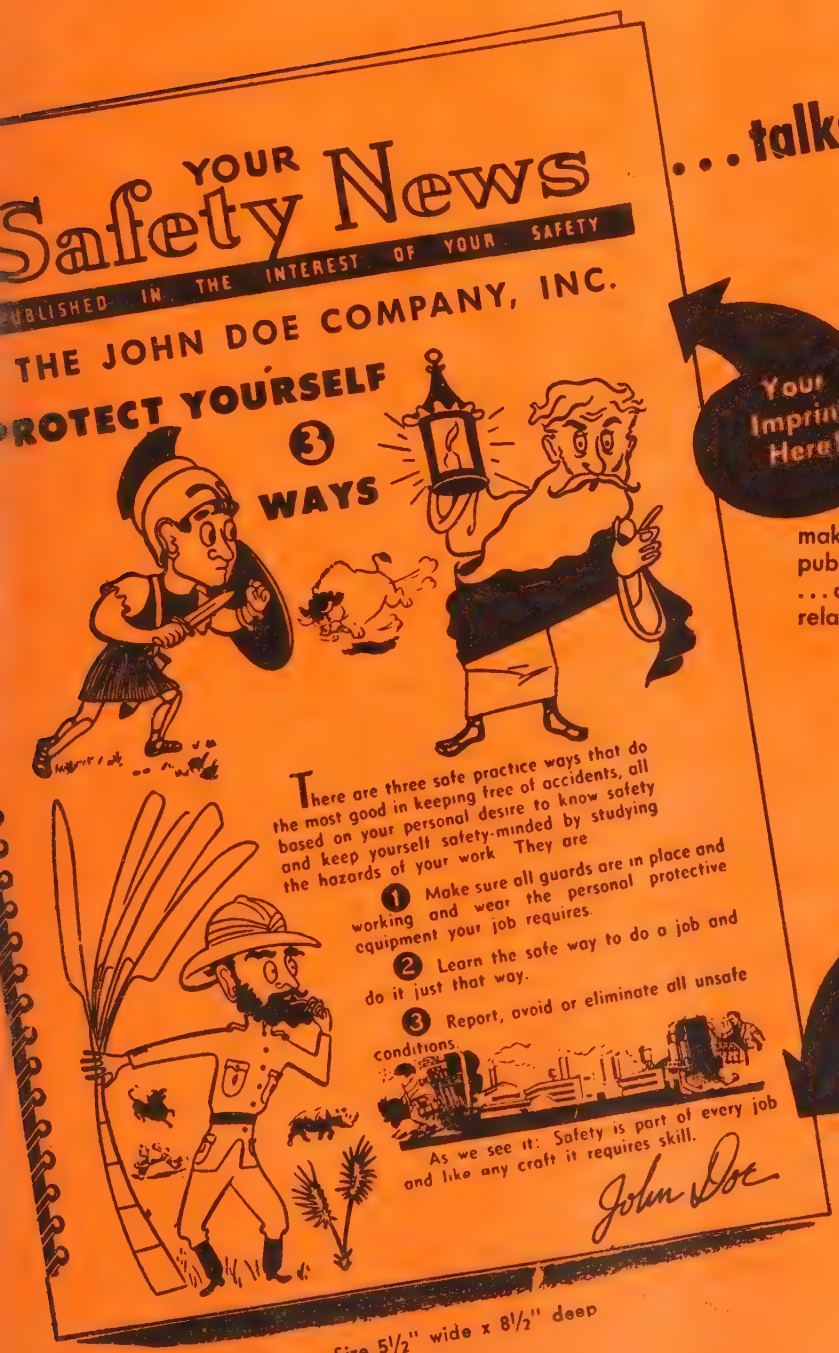
TO EVERY ONE OF YOUR EMPLOYEES!

Safety is made attractive...vivid...colorful...

each worker clearly sees how safety benefits him.

You get enthusiastic safety cooperation instead of

tolerance...from every employee...every month.


YOUR
Safety News
PUBLISHED IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
PROTECT YOURSELF
3
WAYS
There are three safe practice ways that do the most good in keeping free of accidents, all based on your personal desire to know safety and keep yourself safety-minded by studying the hazards of your work. They are
1 Make sure all guards are in place and working and wear the personal protective equipment your job requires.
2 Learn the safe way to do a job and do it just that way.
3 Report, avoid or eliminate all unsafe conditions.
As we see it: Safety is part of every job and like any craft it requires skill.
John Doe

Size 5½" wide x 8½" deep

...talks the worker's language

Full of color, pictures, humor and snap, it makes safety interesting and down-to-earth. 12 times a year it covers every accident hazard. Nationwide, leading industrial firms state it's the *only safety paper their employees will read* . . . and take home to their families.

It gives you the advantages of personal contact, saving time and money. When it prevents one Lost Time accident, it has more than paid its cost for the year. Try it . . . it works!

Your Imprint Here!

makes YOUR SAFETY NEWS your own publication . . . a good-will ambassador . . . another force for better industrial relations.

Every employee feels bucked-up by a note from the boss. If you desire, your facsimile signature can be printed here.

Your Signature Here

NOTE:
Your Safety News is designed to promote better employer-employee relations. Every item is carefully weighed from this viewpoint.

INSIDE PAGES

(pages 2 and 3)

Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well
WANTED
From the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES WORK OVERTIME
Dress for Safety
SAFETY SHOES
FALLS
FALLS KILL 60 EVERY DAY

IN YOUR EMPLOYEE'S INTEREST

Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

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Artwork is carefully chosen to lodge home each point. The cartoon style makes YOUR SAFETY NEWS as familiar and as welcome as the Sunday supplement.

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Keeping the contents folksy, adding the grace note of humor, delivers your safety message with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of tolerance.

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Generous use of color gives sparkle, adds to the attention-riveting qualities of YOUR SAFETY NEWS. Each issue is as lively as any news-stand favorite.

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NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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501 to 1,000 copies	4½¢ each	4¢ each
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100 to 199 copies	6½¢ each	5¢ each
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*5½¢ each plus $3.00 per month for Special Imprint F.O.B. New York, N. Y

AT LAST!

A portable **Explosion-Proof** *industrial vacuum*

Designed for Complete Safety in Industrial Housekeeping in Hazardous Areas

●Here is the *first* industrial vacuum cleaner to combine portability, efficiency and *safety*.

Yes, its powerful 7/8 hp motor, and all parts and fittings are *completely* explosion-proof. In fact, the complete machine is now listed by Underwriters' Laboratories for use in Class 1, Group D and Class 2, Group G locations.

You can safely use this revolutionary wet-dry vac amid explosive gases, vapors, dust, and in dozens of other situations where danger of explosion or fire had previously made use of a vac too risky.

It's ideal for cleaning floors, walls, overhead pipe, machinery or stock bins where there is grease, chemicals or other flammable materials. And since it works equally well for wet or dry pickup, it's just the thing for cleaning combustible material from storage tanks.

Mills and elevators, chemical plants, petroleum refineries, gas plants, and distilleries are just a few of the locations where this new explosion-proof vacuum is especially suited.

It will also pay you to investigate the other member of this famous team . . . the MULTI-CLEAN explosion-proof floor machine. Available in 14″ and 16″ sizes.

MAIL COUPON TODAY!

MULTI-CLEAN PRODUCTS, INC.
2277 Ford Parkway, Dept. SMP-95
St. Paul 1, Minnesota

Gentlemen: Send me more details on the Explosion-Proof vac. I'd like floor maintenance information on:

☐ concrete, ☐ asphalt tile, ☐ terrazzo, and_____

Name_____ Title _____

Firm_____

Address_____

City_____ Zone____ State _____

(For details, use Key # J-5 on card on page 73)

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It's Safe to Say

★ "FASTEN YOUR SEAT BELTS"

Those of us who have occasion to much flying are thoroughly familiar with the electrically lighted sign telling us to fasten our seat belts at the take-off, the plane's landing and during heavy weather. On planes in international service, frequently the warning appears in two languages.

Since no records are kept for "near accidents" or injuries averted we will never know how many serious injuries or fatalities have been prevented by the airlines' insistence upon this regulation which applies to passengers and crew alike. Those of us who have been fortunate enough to receive an invitation to the operational center of the plane have noted that the pilot is the first to fasten his seat belt when, in his judgment, conditions warrant that additional safeguard.

★ ★ ★

Now comes considerable agitation from authorities in widely varying fields for the mandatory use of safety belts in privately operated motor vehicles, and already many trucking organizations have provided for the use of safety belts for their drivers.

Without debating the merits of seat belts for the average motorist, it is obvious that any factor designed to prevent or at least minimize the appalling toll of accidents on our streets and highways deserves very careful study on the part of the outstanding authorities in their field. We know that originally there was a great deal of opposition to the use of safety glass in motor vehicles based upon "impaired visibilty" and the threat of fractured skulls in the event a driver or passenger were thrown against an impact-resisting windshield. We do know, however, that today one rarely hears of severed jugular veins, loss of eyesight or other once prevalent glass injuries caused by shattering or flying particles.

Most innovations, whether or not in the safety field, must meet the forces of opposition pending the end of the trial and error period. Moreover, the psychological factor in the case of automobile safety belts will take on great significance since no one, passenger or driver, will be particularly keen about the sensation of a "harness," especially at the outset. However, the laws of physics being what they are, we know that in certain collisions, an occupant can be thrown out of his seat and—given enough force—often out of the car itself.

The subject certainly is sufficiently vital to warrant serious study and if, as many authorities insist, the automobile safety belt can save lives and prevent grave injury, Safety Maintenance will be among the first to take the stump for the mandatory use of safety belts just as we have crusaded for other forms of safety on and off the job for more than fifty years.

★ NATIONAL SAFETY CONGRESS

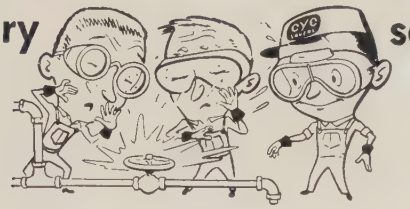
Elsewhere in this issue is a detailed announcement of the nation's greatest single safety exposition to be held in Chicago the week of October 17th.

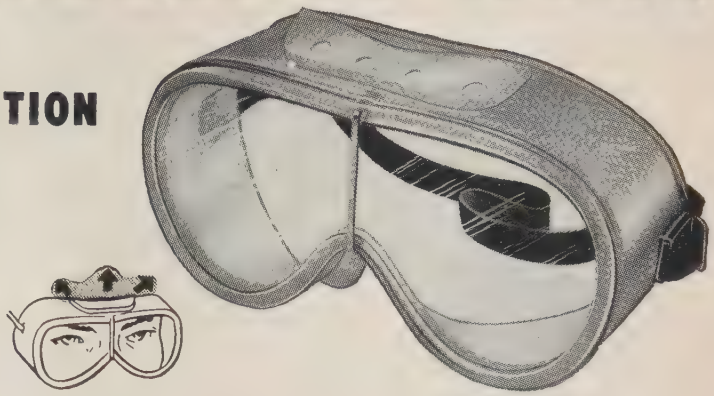
More than ever before, it behooves every line of industry to send its key accident prevention personnel to this exposition to absorb the very last word from hundreds of authoritative guest speakers, and to view the latest developments in products, devices and equipment designed to prevent accidents, fires and contribute to human welfare. Unlike most conventions, the National Safety Congress is not to be confused with the usual elbow-bending junket. On the contrary, over the years delegates from all parts of the free world have returned to their respective communities saturated with information and new ideas covering prevention of losses in money, limb and life itself.—H.A.

WATCHEMOKET EYE SAVERS

COMFORTABLE TO WEAR

COMFORT PLUS 100% PROTECTION





SOFT VINYL FRAME Goggles

COMFORTABLE • LIGHTWEIGHT • FORM-FITTING

- **Comfortable** . . . extra wide lens . . . large vinyl frame fits over all prescription frames.
- **Stac-Vent** . . . better ventilation reduces fogging and provides utmost safety.
- **Eye Savers Lenses** . . . methacrylate lenses are safer . . . shatterproof and never pit.

MODEL 440SV — clear frame **460SV** — green frame
Heavy Impact Goggles with replaceable optically perfect, methacrylate lenses. Clear Lens (C) .125" thick.

Green Lens: Light (G2) Medium (G3) .080" thick.

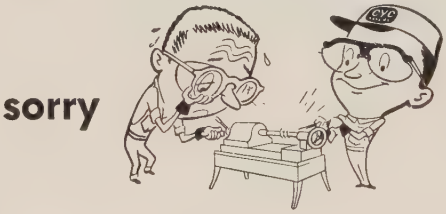
MODEL 441SV — clear frame **461SV** — green frame
Average Impact Goggles with replaceable optically perfect, acetate lenses.

Clear Lens (AC) .060" thick. Green Lens (AG) .050" thick.

MODELS 490 or 491 — opaque black frames
Furnished with Stac-Vent only
Methacrylate Lenses: same as 440
Acetate Lenses: same as 441

COMFORT PLUS 90% PROTECTION

Worn 100% of the time



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- **Economical** . . . initial cost is low . . . maintenance is eliminated, lenses are replaced by each wearer.
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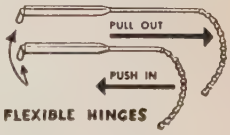

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MODEL 412 metal retrax temples
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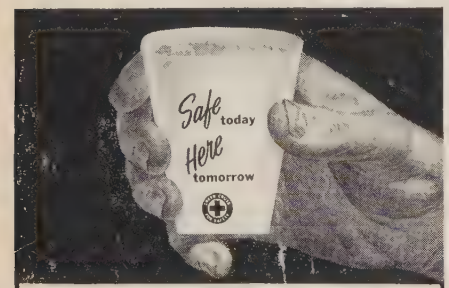
Wouldn't you like to REGISTER with her?

She doesn't look like a menace. But you wonder, sometimes, whether your carefully-planned safety program gets her attention — whether you really register with her.



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Put your safety message right in her hand, several times a day, on an AJAX Cup. Because then she's relaxed, receptive, ready to read. And you know the National Safety Council says safety messages *that get read* do help reduce your accident rate.

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GET THE FULL STORY

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15 DIVISIONS FROM COAST TO COAST

(For details, use Key # J-7 on card on page 73)

C-25

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Now... GREATLY EXPANDED COVERAGE of

Safety and Maintenance Products and Equipment

- listed
- described
- classified
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in the

NEW '56-'57

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WHAT safety and maintenance products to use...
WHEN to use them...
HOW to use them...
WHERE to buy them...

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(For details, use Key # J-8 on card on page 73)

why HEARING TESTS play an important part in accident prevention...

HOW A BELTONE AUDIOMETER CAN HELP

Many industrial accidents have been traced directly to the inability of workers to hear warning signals, the approach of vehicles or equipment. Most of these accidents might have been prevented by a comprehensive Industrial Hearing Test Program.

Such a program has proved invaluable in accident prevention wherever it has been used. It also provides a permanent record which, in many cases, has been the basis for handling compensation claims for hearing loss.

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AUDIOMETER

Model 9A—Price, $295

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2900 West 36th Street, Chicago 32, Illinois

Audiometer Division, Beltone Hearing Aid Co., Dept. 4-174
2900 West 36th Street, Chicago 32, Illinois

Please rush me, without obligation, the FREE booklet describing the new Beltone Audiometer for easy, accurate testing of workers' hearing.

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(For details, use Key # J-9 on card on page 73)

MACHINERY GUARD SERIES
more articles in October and November

Circular Saw Accidents

by **FRANK S. McELROY**
Bureau of Labor Statistics

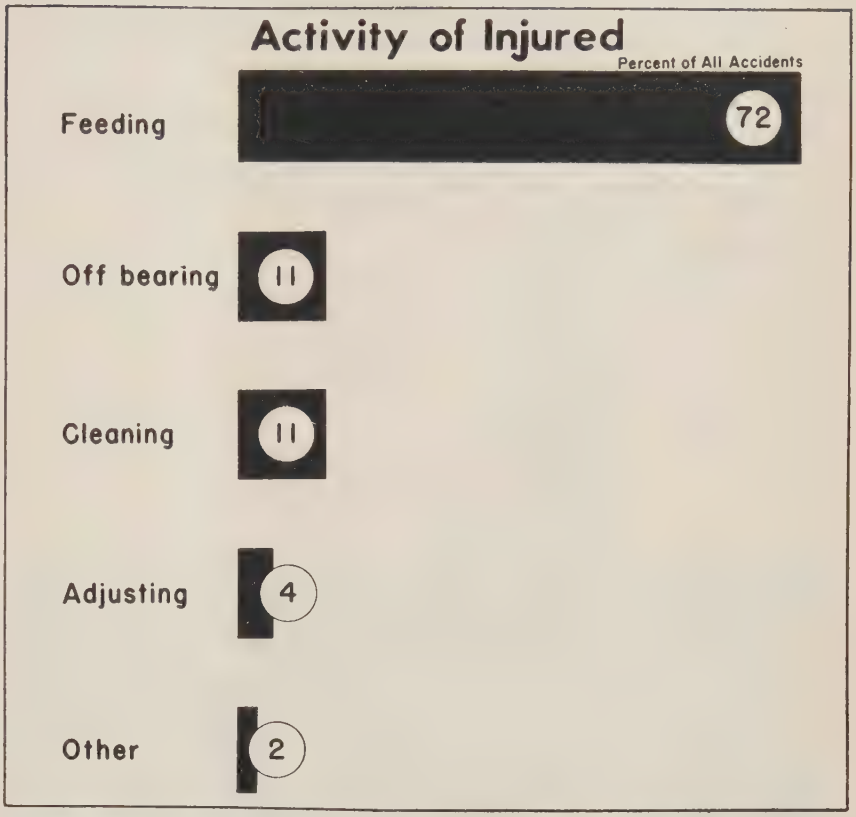
THIS study, in which the Federal Bureau of Labor Statistics cooperated with the safety-inspection staffs of a number of state labor departments, was designed to develop as much factual information about circular-saw accidents as possible to stimulate interest in accident prevention.

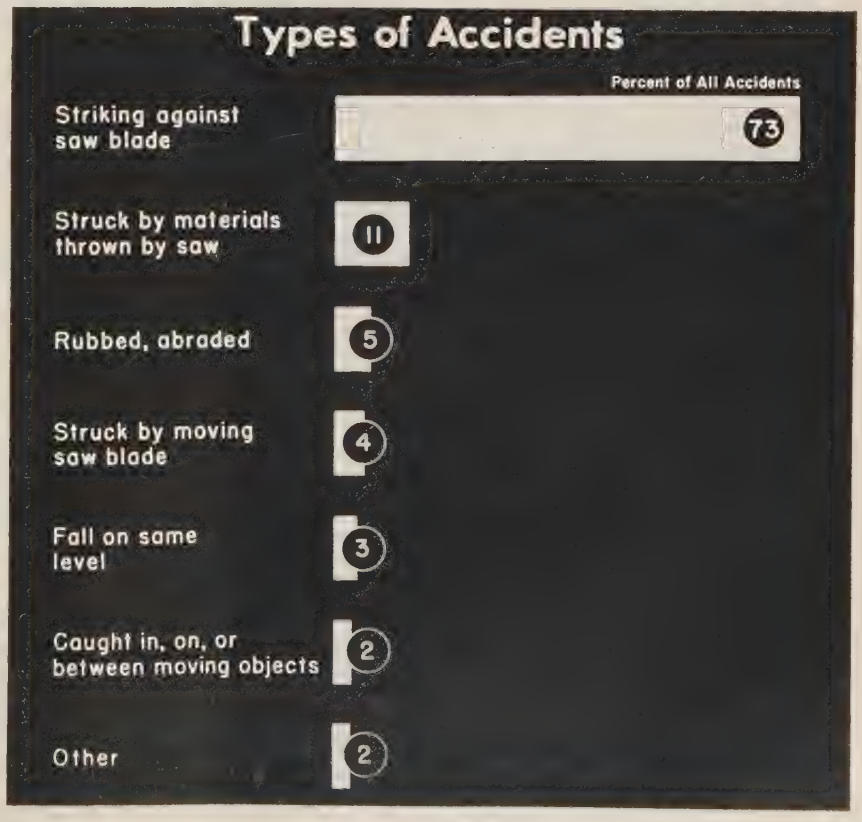
The study includes accidents involving all types of circular saws except portable saws and the large variety of circular saw commonly used in sawmill operations. Collection of the individual case reports was assigned to state safety inspectors and analysis of the data was undertaken by the Bureau of Labor Statistics. To insure a valid and representative analysis, the study was planned to include approximately 12 hundred cases drawn from not less than 12 States. Fourteen states and the District of Columbia did participate.

Instructions to safety inspectors emphasized that:—(a) Cases to be reported should include all accidents involving contact with the saw blade; any part of the frame, table, guards, or operating mechanism of a saw; or with any material being fed to, taken from, or thrown by a circular saw.

(b) Only accidents resulting in personal injury were to be included, although accidents producing minor injuries were to be reported as well as those producing serious injuries.

(c) Cases were to be reported as encountered in the normal course of plant inspections without regard to the industry or type of operation in which the accident occurred. In other words, the data collection was not to be concentrated in woodworking establishments, but should be distributed throughout all types





Amputations are 20 Percent

of industries whenever circular saws are used either for direct production or for incidental activities such as plant maintenance or packing.

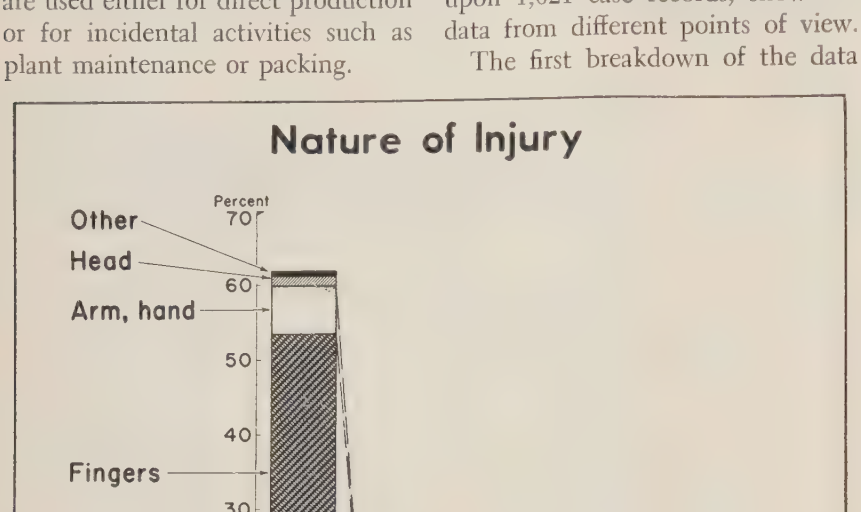
The accompanying charts, based upon 1,021 case records, show the data from different points of view.

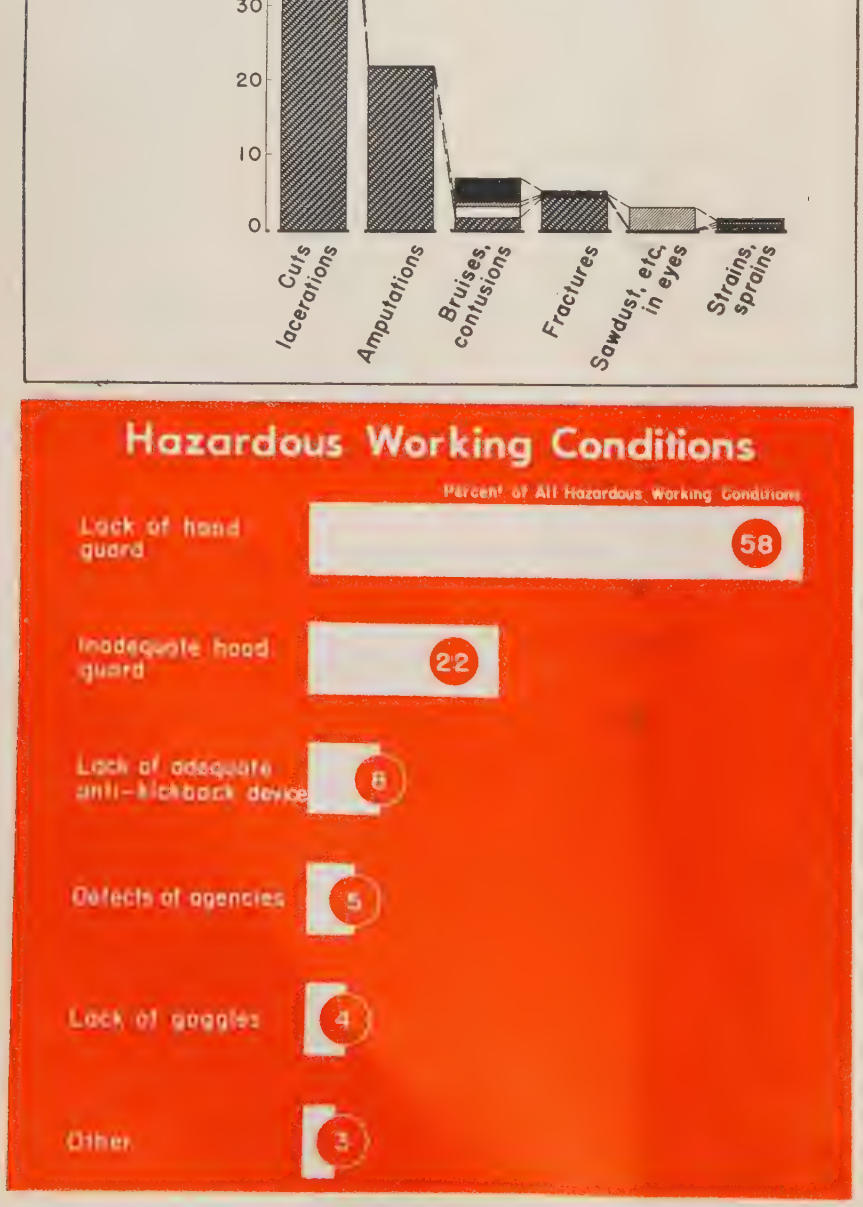
The first breakdown of the data indicates what the injured perso was doing at the time he was i jured. As might be expected, near three-fourths of the injuries we received by workers who were fee ing materials into their saws. Eleve percent occurred while the worke were removing material from th saws and another 11 percent o curred while cleaning the saws.

The second chart indicates i broad categories the kind of acc dents and the agency which inflicte the injury. Here again, the m jority of the accidents were of th variety which might be expected– cases in which the injured perso moved his hand or some other pa of his body into contact with th saw blade. Kickback accidents, hov ever, were fairly numerous as we accidents involving flying sawdu and wood chips. Significantly, pra tically all of the accidents designate as falls were cases in which th worker slipped on scrap or sawdu and fell against the moving sa

The third chart shows the kin of injuries experienced and the pa of the body affected. The importa item in this breakdown is not th predominance of hand and fing injuries, which is about what wou be expected, but rather the hig proportion of amputations. Mo than a fifth of all the injuries we finger amputations, of which abo a third involved more than o finger. The rather large volume fractures (mostly to fingers) i dicates a need for better mater handling procedures in saw ope tions; and the volume of eye i juries opens the question as to t need for greater use of goggles.

The fourth breakdown shows t unsafe conditions which direct contributed to the occurrence of t accidents—in other words these a the physical or mechanical hazar which caused the accidents. In ge eral terms, the most prominent h ard was inadequate guarding of t saw blade—90 percent of the ac





ll Injuries!

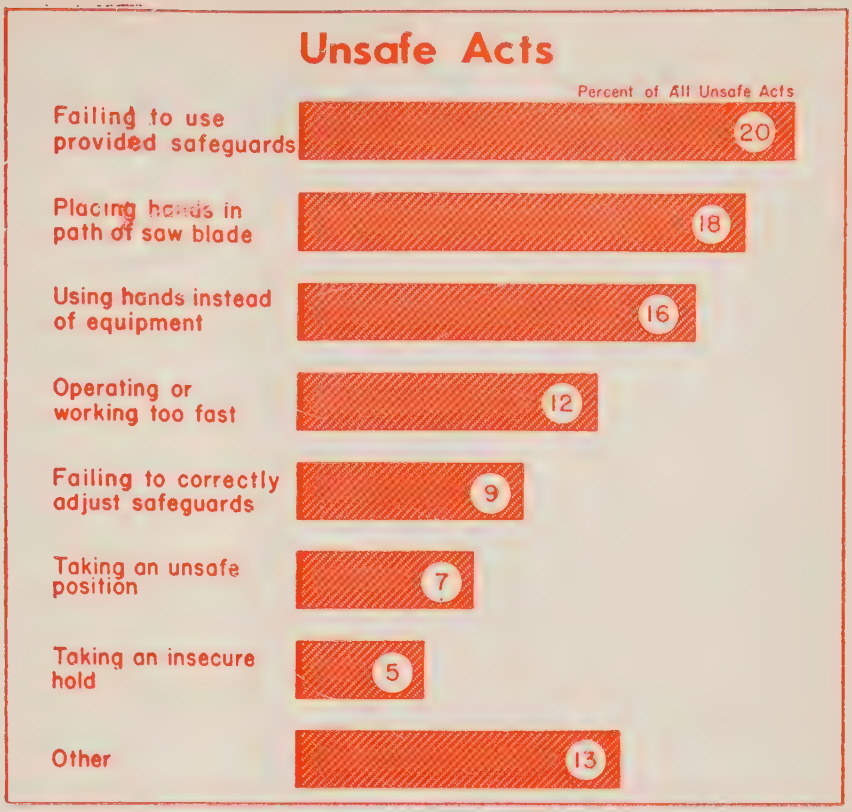
dents were attributed to this general cause. This is an impressive figure, ut the really significant information lies in the further breakdown of this classification. This group includes 902 accidents. In 586 of these cases the cause of the accidents was the lack of a cover guard for the blade and in 68 cases the cause was the absence of anti-kickback devices!

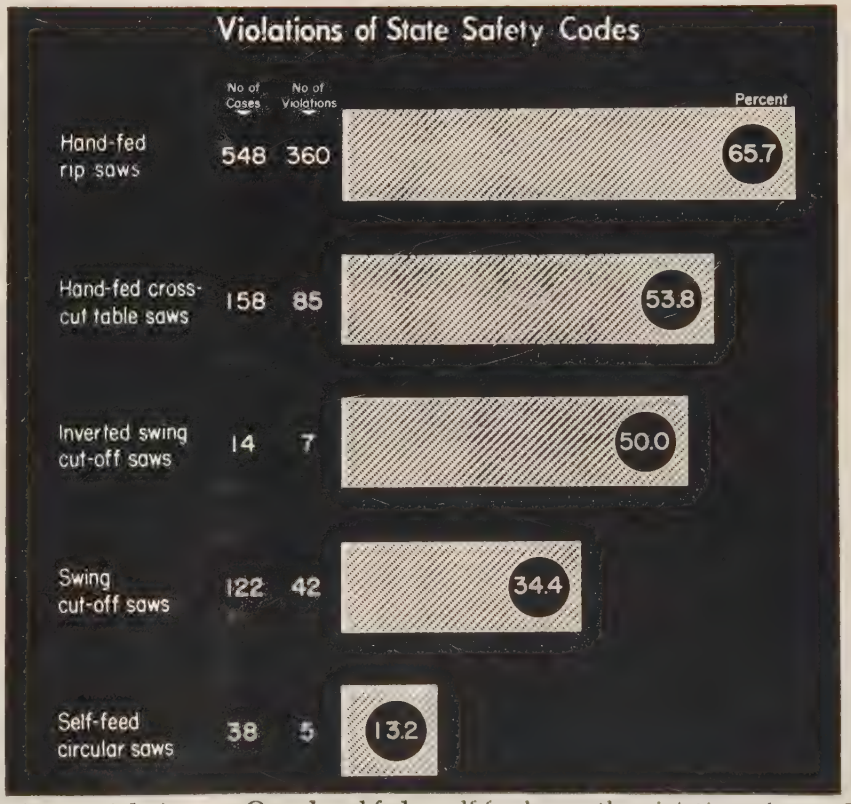
The remainder of the group were cases in which there was a guard on the saw but it proved inadequate to prevent the accident. Inadequate design was the most common fault, but there also were many instances in which the effectiveness of the guard was lost through improper ljustment.

The fifth chart indicates the personal faults or errors which contributed to the accidents. The most ommon fault was that of operating saw without a guard when there as an adequate guard available. ext in importance were the cases which the operators placed their ands on the stock directly in line ith the blade and then misjudged ow close their fingers were to the utting point.

Using hands instead of equipment, the third most common error, consisted primarily of using the hand instead of a brush to clean the saw table or to remove scrap, and of failing to use a push stick in feeding small stock. In the fourth category, working too fast, the most common errors were feeding too fast and cleaning or adjusting equipment while it was in motion.

The last chart shows how the cases in the sample were distributed among the various kinds of circular saws and the percentage of cases in which the inspector reported that there was a violation of the applicable state code. Two-thirds of the accidents on hand-fed rip saws involved violations. On hand-fed crosscut table saws and inverted swing cut-off saws half the cases involved violations. On swing cut-off saws, however, only a third of the cases involved violations and on self-feed saws the violations dropped to 13 percent.





Charts by courtesy of U. S. Department of Labor.

From a report to the International Association of Government Labor officials on a cooperative survey conducted by the States and the Bureau of Labor Statistics.

Most Common Error? . . . No Guard!

28 Points for Fork

"Some companies find that the introduction of industrial trucks skyrockets accidents and damages to a point where economies normally expected from such equipment are not realized," reports W. A. Meddick, vice-president of the Elwell-Parker Electric Company.

"However," he continues, "since the human element affects truck operation so closely, proper selection and efficient training of truck operators are the keys to obtaining maximum truck potential. It doesn't matter if you use 1 or 1 thousand industrial trucks; driver training is a must. After all, one truck in a small plant can do just as much damage, and often more in proportion, than a fleet of trucks in a larger plant."

To help both large and small companies maintain an effective driver safety program, Mr. Meddick cites 28 rules.

1. Drivers must stop within 8 feet in open aisles or roadways; within 3 feet in narrow aisles, near machinery and in congested areas. A distance of at least 10 feet must be maintained between moving vehicles. Extreme care must be exercised where floors are wet or greasy.

2. Trucks must be completely stopped and the horn sounded before: (a) entering doors of all buildings, (b) approaching blind corners, (c) turning into or crossing main aisles, (d) entering ramps.

3. Vehicles must be started and stopped without skidding the wheels.

4. Drivers must learn the capacity of their vehicles and lift no loads above that capacity.

5. Disabled trucks must be towed by another vehicle; they must not be pushed.

6. Don't allow loads to obstruct the operator's view. Normally, loads should be such that this does not happen. If, occasionally, such size loads are unavoidable, the truck should be moved backwards.

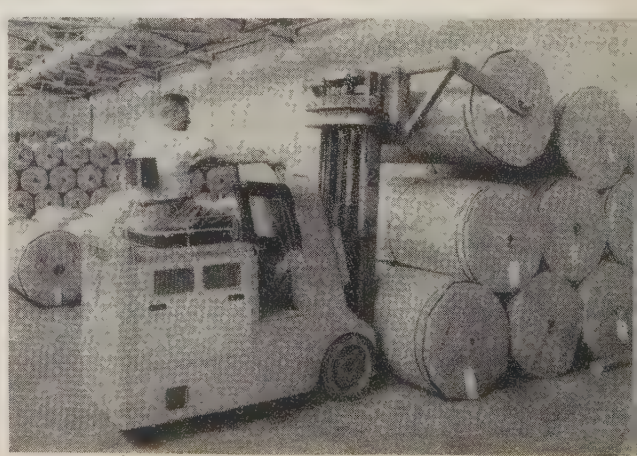
7. Loads should never be picked up with the forks off center. A probable result: spilled loads, damage to truck or surrounding areas, injury to operators or other workers. If a load is set down temporarily, the same care in picking it up again should be exercised. By the same token, loads should be prepared so that the weight of a load unit itself is not appreciably off center. Loose loads should be carried in proper containers.

8. Personnel other than the driver himself should never operate or ride on an industrial truck. Unauthorized persons riding on forks or platforms, sitting on the battery or engine compartment, crowding the operator, or hanging onto the truck can only invite compensation claims. Practical jokes can lead to serious injuries. Also, except when absolutely necessary or when closely supervised, a fork or platform truck should never be used to hoist personnel to reach the top of inaccessible areas.

9. Travel areas for industrial trucks should be kept free of ruts, obstacles, grease, oil, pits, etc. Failure to do so increases accidents. Truck operators should look out for unsafe operating conditions and report them.

10. Loads should be carried as low as possible. The higher the load is carried the more difficult it is to control. Loads carried high obstruct the operator's view, hinder maneuverability and reduce truck stability.

11. Doorways, corners and other travelways should be outlined with bright colors or hash marks. Pipes, machinery and other obstructions should be outlined in contrasting colors so that drivers can spot them immediately. Also, trucks should be painted in bright colors so they may be seen by other personnel. If a driver is not sure he has sufficient clearance he should stop his truck and make sure—not guess.



-Truck Safety...

12. At the first sign that a truck is not operating 100 percent efficiently the driver should report it to the maintenance department or to authorized personnel. Equipment failure caught in time can prevent many accidents.

13. Drivers should avoid making sudden or jerky stops. The momentum of the load may play tricks on the operator. Special care should be taken in stopping when a load is elevated for tiering or stacking.

14. If the truck has a tilting device it should be used. By tilting the uprights toward the operator the weight of the load is brought back slightly and balance is improved. This slight tilt of 8 to 10 degrees helps avoid spilling the load when rounding corners and making quick stops.

15. Railroad trucks should always be crossed diagonally instead of at right angles.

16. The truck should be kept clean at all times. Dirt and rubbish make footing uncertain and may cause more trouble if obstructions lodge in the mechanism.

17. Traffic rules should always be observed. Operators should keep to the right and not travel in the wrong direction in one-way lanes. They should watch for low clearances.

18. Trucks should not be driven with wet or greasy hands. If necessary, a towel or wiping rag should be kept where it can be easily reached to dry hands before taking hold of the controls.

19. Operators should slow down before opening doors by remote control. They should be prepared to stop safely if it is found that the automatic mechanism is out of order or if the way is not clear beyond the door.

20. Fire prevention rules should always be observed. If the truck carries a fire extinguisher it should be in good condition and the driver trained in its use.

21. Swinging doors should be approached squarely and in the center to avoid breaking hinges.

22. The horn should be used, but not abused. The driver must signal when approaching intersecting aisles, blind corners, or swinging doors. Several short blasts are better than one long blast. A driver should signal and slow down when approaching a pedestrian who is walking away from him. However, startling others with loud blasts of the horn should be avoided; the horn can be a hazard if used improperly. Sounding of the horn does not give the driver the right of way.

23. Trucks should be parked safely. They should not be left where they will block aisles, loading platforms, or doorways.

24. Operators should look before they start and be certain that personnel and objects do not obstruct the path of the truck, not only at leg level but also at head level. Particular care must be taken before backing out from a load.

25. Every collision should be reported to authorized personnel. Even if no damage is done, the causes of all collisions with other trucks, with persons, or with other objects, should be determined and corrected.

26. Crowds should be avoided. This should include congested areas during shift changes and lunch periods.

27. If more than one truck is operating in the same area the one following must stay at least 15 feet behind. Trucks should never travel two abreast.

28. Hoists should be handled carefully. They should not be raised or lowered when traveling. Hands should be kept off hoist tracks.

Pictures by courtesy of Elwell-Parker Electric Co.

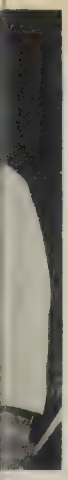
from the ground up

. . . Airforce Base Sets Itself a New Safety Record

57,000,000 accident free hours

EVERY MAN, WOMAN AND child i
San Antonio, Texas (pop. 406
811) would have to work a 40-hou
week for three weeks without
single lost-time injury to equal th
safety record compiled last year
nearby Kelly Air Force Base.

Thirty-nine activities at Kel
Field contributed to the total of 5
million consecutive accident-fr
manhours. Pacesetter of the grou
was the Directorate of Maintenanc
Engineering, which set what th
base believes to be an all-tim



FAR LEFT—Helmet, gloves, and apron protect welder.
FAR LOWER LEFT—Women employee gets safety equipment.
LEFT—Goggles and cap for band-saw operator, but no jewelry.
BOTTOM—Kelly-designed gate-guard contributes to record.
BELOW—Cup and cane remind workers to use eye protection.

national high for any single organization, with almost 11 million consecutive manhours without a lost-time injury.

More than 10 thousand civilian employees of Maintenance, involved in some of the most hazardous ground jobs in the aviation industry, worked from Jan. 1 to June 1 without accident.

The record was announced by Maj. Gen. Thetus C. Odom, commander of the San Antonio Air Material Area, as he awarded Million Manhour Club Certificates to 29 organizations. In addition to the certificates awarded to civilian components for safety achievements, the Air Force now has a program by which military organizations may receive similar recognition when a unit has 25 thousand consecutive military man days of service without incurring a reportable lost-time injury. The program also applies to organizations which have 25 thousand miles of operation in an Air Force vehicle without an accident.

The Million Manhour Club, which is now recognized by many components of the Air Force, originated at Kelly Field in June, 1953, at the suggestion of Maxie L. Brooks Sr., of the Ground Safety Division. The idea was endorsed by higher command and forwarded to Air Material Command, where it promptly became a command-wide project.

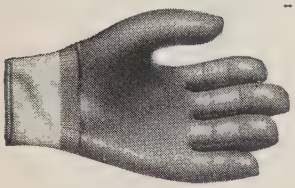
Pilots at Kelly Field have run up an excellent safety mark in the air during 1954. Duplicating that mark

(Continued on page 46)

7 ways to cut costs with Edmont job-fitted gloves

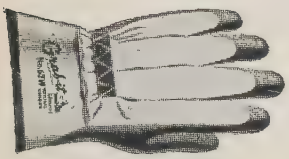
Werx No. 151 . . . 2 styles

REPLACE CANVAS AND GOATSKIN Modern plastic-impregnated material outwears canvas 4 to 1, costs far less than goatskin, has excellent grip at all times, and allows full finger freedom. Material lets hands breathe comfortably. Washable.



Snorkel No. 404 . . . 3 styles

SUPER-FLEXIBLE COATED GLOVES New ease for faster work handling. Perfect fitting pattern has wing thumb, preflexed curved fingers and seamless working area. Made with easy-stretch jersey liner and non-slip finished vinyl palm coating or over-all liquid-proof coating.

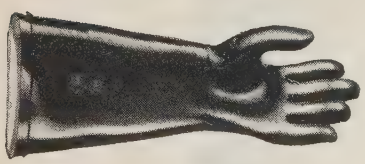


Grab-it No. 62W . . . 11 styles

SAFEST GRIPPING WORK GLOVES Wet or dry, the rough textured natural rubber coating gives positive non-slip grip. Highly cut resistant, outwears canvas up to 10 times.

Neox No. 922 . . . 8 styles

MORE FLEXIBLE NEOPRENE COATED Edmont has increased the flexibility of Neox (reinforced neoprene) coated gloves, long preferred for all-purpose protection against cutting, abrasion, oil, grease, chemicals and heat.

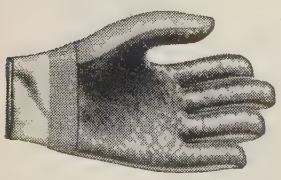


Redmont No. 938 . . . 6 styles

HEAVY DUTY NEOPRENE PROTECTION — 30% thicker red Neox coating with cured-in non-slip finish that grips wet or dry. Recommended for maximum protection and long wear under severe conditions.

Grappler No. 363 . . . 5 styles

REINFORCED PLASTIC GLOVES THAT GRIP IN GREASE — Edmont's "Durox" coating retains its grip when wet. Outwears plastics by 50% or more. Note hand-fitting pattern, exclusively Edmont.



Monkey Grip No. 31 . . . 13 styles

JOB-FITTED PLASTIC COATED GLOVES — Edmont's seamless palm, wing thumb, curved pre-flexed fingers and perfect fit, coated with special vinyl. **Includes triple-thick palm styles which are world's longest wearing work gloves.**

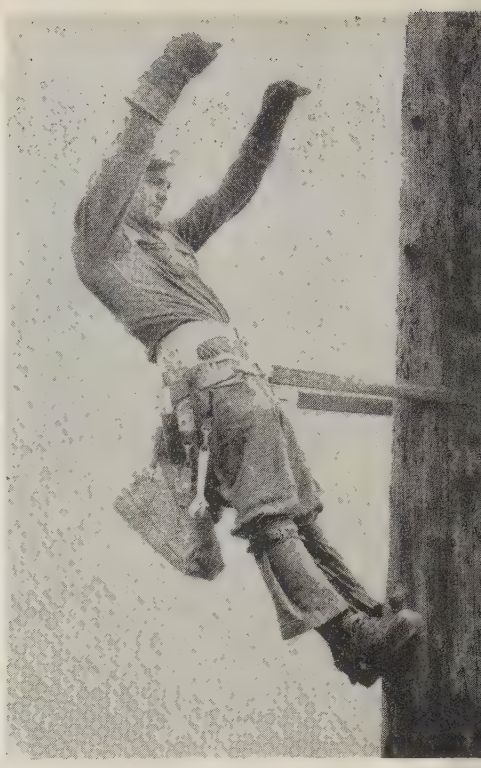
FREE TEST OFFER: Tell us your operations, materials handled and temperature condition. We will recommend correctly job-fitted gloves and forward samples without cost for on-the-job testing.

Edmont Manufacturing Company, 1256 Walnut St., Coshocton, Ohio

World's largest maker of coated industrial gloves

Edmont

(For details, use Key # J-10 on card on page 73)



THE nation's linemen have often been plagued with backaches. Sometimes it has caused more complaints than live wires. Recently a new belt has been developed that promises to go a long way to correct this malady and, like most improvements, has many plus values.

During the years since World War II there have been some great advances in safer climbing equipment for utility and industrial linemen. These advances, however, have taken place primarily in climbers, hardware, and safety straps, but very little has been done to improve the lineman's body belt. As the growth of the utilities has continued over the past several years, the lineman has been required to carry more weight on the pole, climb higher, reach farther and be on the pole longer. The combination of these factors contributed to the increase in backaches and made improvement of the lineman's body belt necessary. The heights to which he climbs, the length of time on the pole, the weight he carries, and the distance he must reach make his body belt a very important part of the lineman's safety. Most body belts have drawbacks on one or more of these counts.

A new body belt attacks

LINEMEN'S BACKACHE

Recently there has been introduced on the market a new type of lineman's body belt, designed to correct and alleviate most of these climbing problems.* The belt, for the most part, is constructed similarly to a regular body belt as far as the tool saddle, dee assembly, and waist strap are concerned; but there the similarity stops. Instead of the usual 3 and a half to 4 and a half inch width, the belt is 9 and a half inches wide and features two waist straps instead of one. The material used in the construction is steer harness leather for the tool saddle, dee saddle and lower waist strap, while the 9 and one-half inch body pad and upper waist strap is cut in one piece. It should be pointed out that in normal design, the top waist strap runs about 4 inches shorter than the lower waist strap.

The original idea for this new style body came from a lineman working for a large power company located in southern Indiana. The reason for making the belt in the first place was to get back support during long periods on the pole. After extensive field tests other advantages in this new style belt became more and more apparent. It was found the tool saddle, the portion which actually holds the tools, remained properly positioned at all times. Sagging of the belt from the tool weight was done away with.

More Freedom

It was also learned the waist strap of the tool saddle no longer needed to be pulled up tight around the man's hips. This feature not only eliminated a point of discomfort, but allowed the lineman more freedom of movement in his work. This is true not only on the pole, but also while the lineman is on the ground walking from pole to pole. The top waist strap always keeps the tools positioned properly.

Still another feature brought to light is as important as the back support the belt gives. In many body belts, when on the pole, the lineman must always be careful not to lean too far out or get his feet too close to his safety strap for fear of the body belt sliding down over his hips. You must remember the average lineman wears his present body belt around his hips and many present day linemen use various methods to keep from sliding out of their body belts. The methods used to prevent this sliding range all the way from shoulder harnesses attached to the body belt, to insulators in their back pockets.

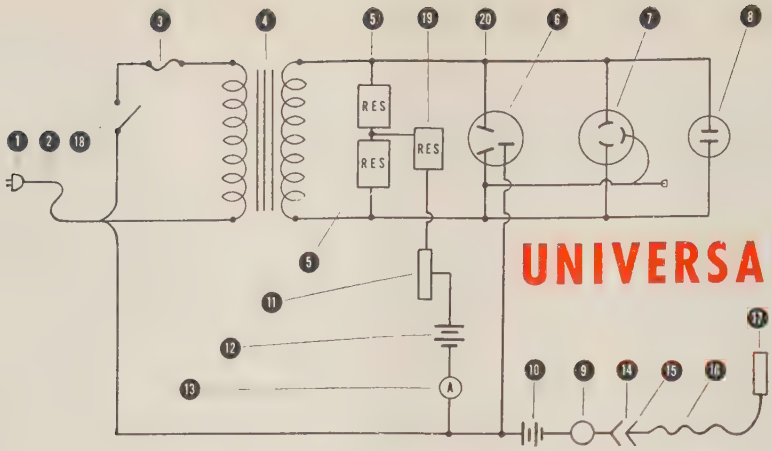
Acrobatics Possible

The new style body belt does away with all of these uncomfortable working practices. It is now possible for the lineman to actually bend backwards to the point where his head is lower than his feet without worrying that he'll slide out of his body belt. In one demonstration of this point, a lineman with his climber gaffs about 2 feet up the pole, bent backwards and picked a pair of pliers off the ground. Other general features of the body belt are its light weight. with about the same amount of leather as a regular belt; ventilation of the back support for more comfort in warm weather. In field tests in temperatures ranging from 80 to 95 degrees, linemen claimed the belt was very comfortable.

In short, this new body belt couples safety with comfort and support.

* The name and address of the manufacturer of the belt can be obtained on inquiry to the editor.

Pictures by courtesy of Miller Equipment Co., Inc.



UNIVERSAL TESTER

by P. C. ZIEMKE

Determines Defective Insulation

THIS is the electrical appliance age, with new items constantly being added to the ever-increasing list of equipment. And, while these devices serve well, there comes the inevitable day when the smoke curls, the fuse pops, or sparks fly, and the machine is due for a tour of the repair shop.

To speed up this tour by a quicker analysis of trouble spots we have installed a universal tester for use in each of the tool cribs about our plant. The panel is vast improvement over the garden variety of test lamp with prongs, telephone ringer set to test for continuity or short circuit, and perhaps the more thorough-going Megger test. The test panel enables the crib attendant to plug in any type of appliance brought him, regardless of the voltage, the type of plug employed, or whether grounding is done by a separate conductor with spring loaded clip attached. The voltmeter scale is marked off in 2 divisions——the right hand half being red to indicate a condition requiring service by the electrical shop. The left half is green which is indicative of insulation values that are preconsidered safe for continued use.

A feature of the panel's use is that each electrical appliance is sent through the tool crib at 6 month intervals to detect faulty insulation, worn bearings, or sticking chucks before they become worn beyond repair, or become dangerous shock hazards. Stickers attached to the plug end inform the user of the date the unit is due for inspection. The bulkier items such as fans, desk or pedestal, typewriters and adding machines, time clocks, bookkeeping machines, and addressographs are checked in place by electricians using Meggers.

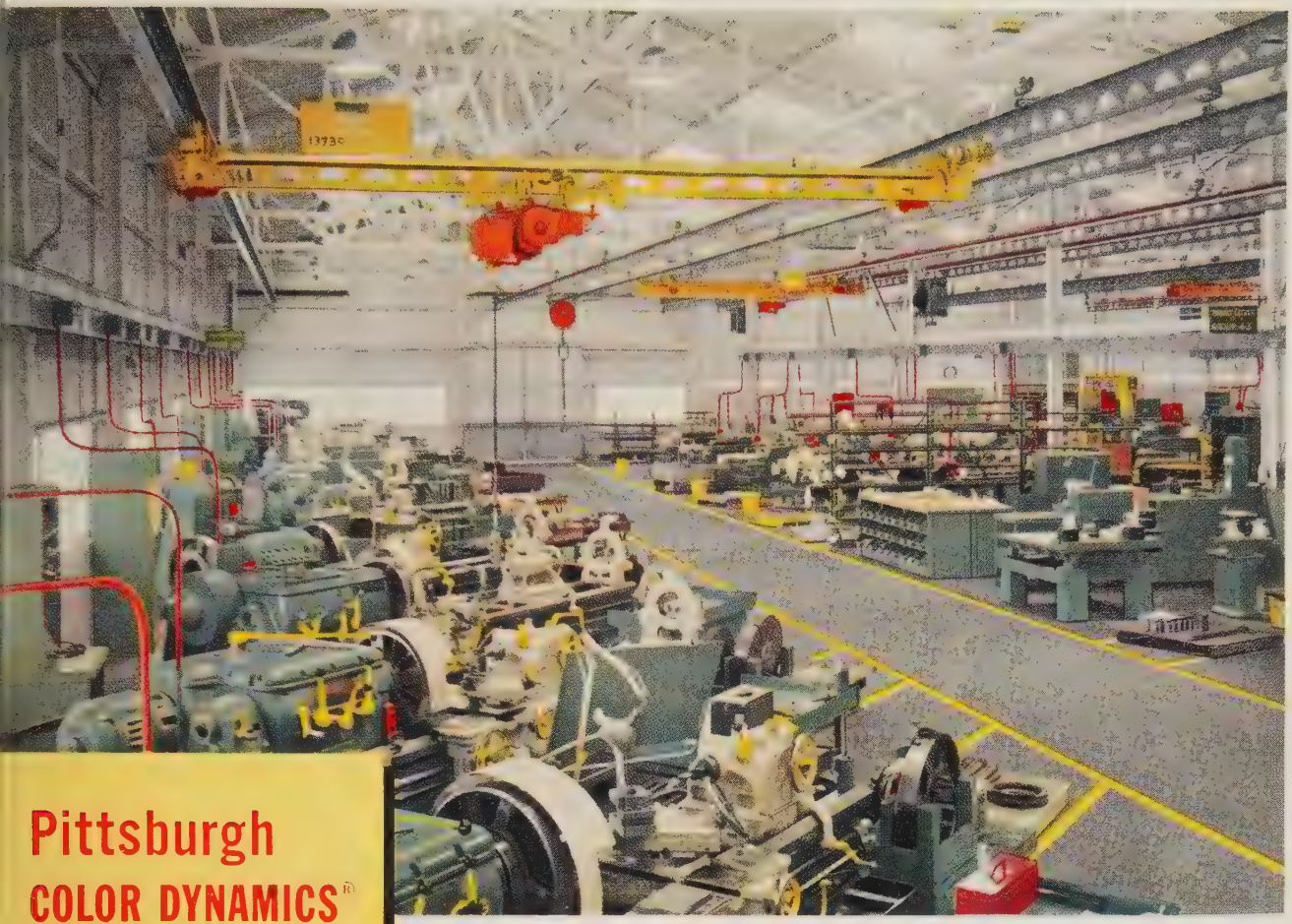
With 3 distinctly different types of convenience receptacles installed on the front panel of the tester the crib attendant merely plugs the questioned cord attachment plug of a given machine to obtain an instantaneous reading of the insulation values. The receptacles are ordinary non-polarized 2-wire, 3-wire polarized, single phase, and 3-wire, 3-phase, twist-lock type for tools operating on 230 volts.

In addition to the receptacles the test panel has a ground lead with clip to attach to the metal frame any unit not equipped with a 3-wire cord. There is also a ground stud to attach those cords with a non-polarized plug, and also a ground wire terminating in a spring clip. With the motor or appliance plugged in the operator trips a toggle switch and watches the deflection of the voltmeter needle. For the crib attendant who tends to find difficulty in differentiating when a tool is to be passed or rejected at some installations we mark half the scale in green and the balance in red. Piece work production may be then attained if desired. The meter is set at 1.5 megohms to mark the line of demarcation between good or bad equipment.

Materials List—Parts Identification

Item	Quantity	Description
1	1	3 pole polarized plug
2	10 feet	No. 16 S.J. 3/0 cord
3	1	Fuse extractor post with 8 amp fuse
4	1	250 V. A. 115 V.,—115 V Transformer
5	2	Fixed resistor 10,000 ohm, 5 watt
6	1	15 amp, single receptacle, 2 w, 3 p., polarized
7	1	15 amp. single receptacle, 2 w., 3 p., 115 V
8	1	15 amp, single receptacle, 2 w, 2 p., parallel
9	1	Indicator light assembly with miniature screw socket with green jewel and 6–8 V Mazda lamp
10	1	7.5 V. standard "C" battery
11	1	1 megohm potentiometer, shaft slot for screw driver adjustment
12	1	90-V, "B" battery
13	1	50-microammeter, D. C., 2,100 ohm
14	1	Insulated phoned tipped jack
15	1	Insulated solderless phone tip plug to fit No 14
16	3 feet	Flexible test cord wire
17	1	5-in solderless test prod
18	1	1 p., 125-V, toggle switch
19	1	Fixed resistor, 1.5 megohm, 5 w
20	1	Terminal strip with 4 terminals
21	1	16 ft, No 14 switch-board wire, stranded

For copy of booklet described opposite— use Key # J-40 on card on page 73.



Pittsburgh COLOR DYNAMICS®

Helps Employees See Their Work Better!

Modern system of painting improves efficiency and morale by providing better lighted and more cheerful work areas in California machine shop of Westinghouse Corporation

HOW management and workers benefit from the use of Pittsburgh COLOR DYNAMICS is demonstrated daily in the machine shop of the western headquarters plant of the Westinghouse Electric Corporation at Sunnyvale, California.

This huge structure of steel and reinforced concrete was painted according to the principles of COLOR DYNAMICS to increase efficiency and provide cheerful surroundings.

Interior walls and ceilings were painted to raise the light level so that machinists can read micrometer markings easily. Stationary parts of machine tools were painted restful Vista Green and working parts Focal Ivory. Levers were painted Focal Yellow and electric controls, Focal Orange.

By reducing the effort needed to differentiate between machine, materials and controls the operator is able to focus his attention better on his task. Eye strain, nervous tension and physical fatigue are lessened.

Cranes, overhead conveyors and traffic lanes were painted with safety colors to reduce danger of accidents.

How successfully such purposeful use of color has contributed to productive efficiency and employee morale is summarized in this comment of G. F. Gayer, Plant Manager:

"We are so convinced that COLOR DYNAMICS has bettered production and employee relations in our machine shop that we are extending this method of painting to our other buildings. We want our other workers to benefit from such improved environment. Pittsburgh is to be complimented on the contribution to industrial planning its modern painting system is making."

This Westinghouse machine shop is only one of thousands of plants all over the country in which production has been improved with COLOR DYNAMICS. Why not try it in your plant next time you paint—and see what a difference it makes.

You Can Have an Engineered Color Study of Your Plant—FREE!

We'll be glad to mail you a free copy of our trated booklet on COLOR DYNAMICS for st'y. It explains clearly the principles of this le'n method and how to apply them. Better we'll gladly submit an engineered color study your plant, or any part of it, without cost or gc tion. Call your nearest Pittsburgh Plate Glass pany branch and arrange to have a repreative see you. Or mail coupon at right.

Send for a Copy of This FREE Book

Pittsburgh Plate Glass Company, Paint Div., Department SM 95, Pittsburgh 22, Pa.

☐ Please send me a FREE copy of your booklet "COLOR DYNAMICS."

☐ Please have your representative call for a COLOR DYNAMICS survey without obligation on our part.

Name_____

Street_____

City_____ County_____ State_____

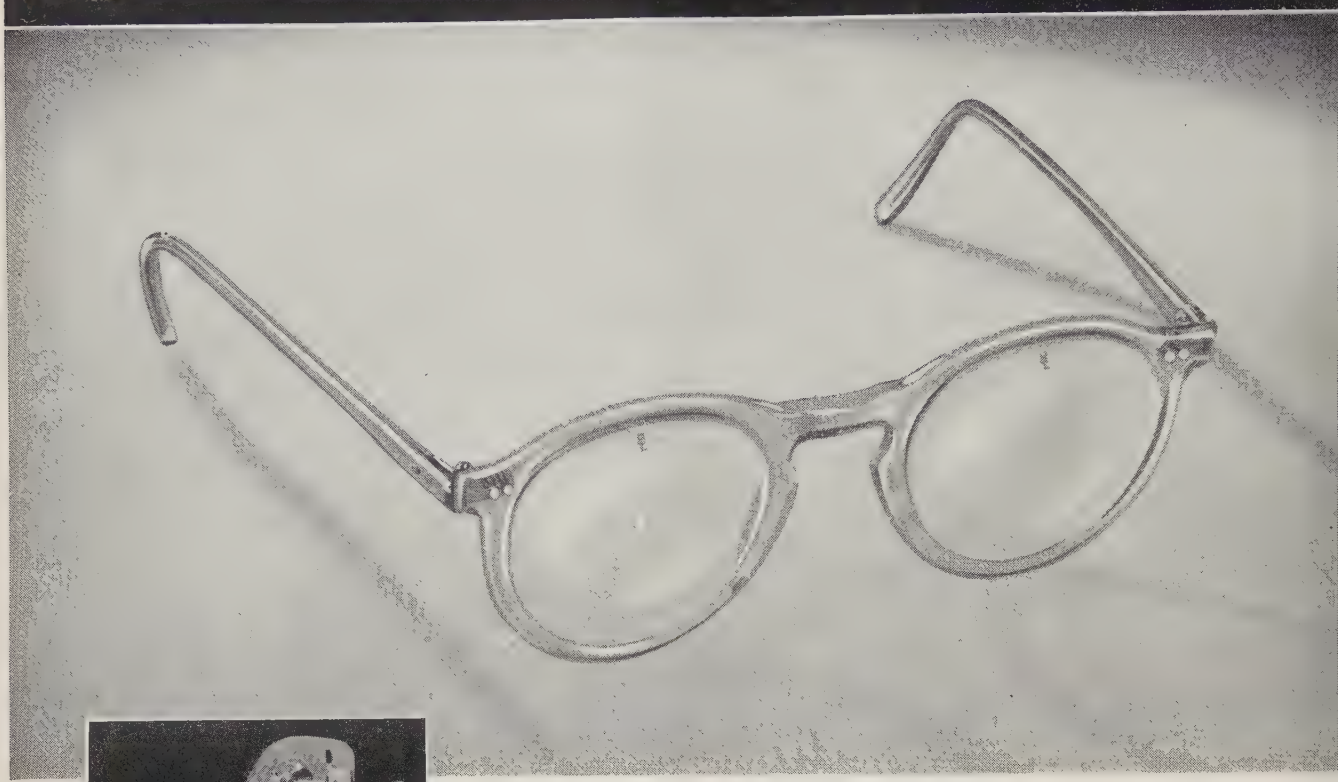
PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS • FIBER GLASS

PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

SAFETY LENS QUALITY IS NEVER A LUXURY



Bausch & Lomb Y-70 all-acetate safety frame with Bal-SAFE lenses

Bausch & Lomb glass technology insures an **EXTRA** margin of safety in Bal-**SAFE** lenses

For eye protection the lens is the thing. It may stand between a worker's precious vision—and tragic, eternal blackout.

You provide the finest protection science offers—when you specify Bausch & Lomb protective eyewear with Bal-SAFE impact-resistant lenses.

Only the finest glass is used—made in the nation's only plant devoted exclusively to production of optical glass—Bal-SAFE lenses are free from imperfections that can lead to disturbed vision, headaches and nausea. Bausch & Lomb heat treating methods insure the precise control necessary for a superior degree of impact resistance.

Acquaint yourself with Bausch & Lomb safety eyewear and with the extra quality of Bal-SAFE lenses. There's a representative in your area.

Now available

New Bal-SAFE Lens Impact Tester is ideal for demonstration at employee safety sessions. Hammer hits lens with force of ⅞" dia. steel ball dropped 50 inches. Bottom photo shows how unhardened lens is shattered. For price, ask your B&L Industrial Vision representative.

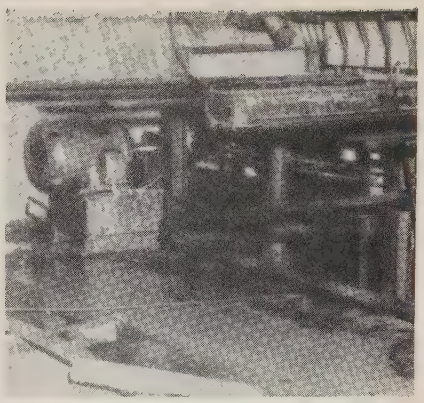
BAUSCH & LOMB

Just mail this coupon with your business letterhead to get your free copy of "Complete Eye Protection."

BAUSCH & LOMB OPTICAL COMPANY
90545 Smith St., Rochester 2, N. Y.

(For details, use Key # J-12 on card on page 73)

A SAFETY IDEA



THIS is the scene of an avoided accident . . . one that 9 times out of 10 would create terrible damage from fire, and perhaps cause death. That is hydraulic fluid on the floor, and above it is a furnace.

Just a few minutes before this picture was snapped, a hydraulic line burst and sprayed hydraulic fluid into the open mouth of the furnace. The entire contents of the reservoir was pumped into the flames and all over the outside of the furnace before the motor could be shut off.

There was a lot of excitement, but nothing dangerous happened. The hydraulic fluid merely snuffed itself out in a cloud of steam. Ordinarily, the lethal spray would have caused either an explosion or a flash fire, probably taking a staggering toll in lives and property.

Good fortune was with this plant, The Jeffrey Manufacturing Co., Columbus, Ohio, only because it was using a water-base, fire-resistant hydraulic fluid. The picture would have been a grim one had the fluid been a standard petroleum base liquid.

Picture by courtesy of E. F. Houghton & Co.

National Safety Congress

SAFETY MEN from all fields—industrial, traffic, farm, school and home—will converge on Chicago, Oct. 17–21, to attend the 43rd National Safety Congress and Exposition, the annual convention of the National Safety Council.

More than 12,000 persons are expected to hear some 600 program participants at 200 sessions discuss the latest methods of saving life and limb by preventing accidents. In the industrial field alone, 25 complete programs conducted by the industrial sections of the Council will cover new developments in safety in such industries as automotive and aircraft manufacture, chemical, construction, food, metals, mining, petroleum, public utilities and wood products.

In addition to these specialized meetings, the American Society of Safety Engineers will sponsor sessions of general industrial interest. Prominent safety engineers will discuss new developments in isotopes and reactors, industrial noise control, accident cost accounting and the human element in industrial accident prevention.

Arthur Secord, director, community service and professor of speech, Brooklyn College, will give a series of four "early morning" talks on communication and safety. He will tell how to sell safety, how to criticize tactfully and how to make recommendations that bring results.

Congress meetings will take place at the Conrad Hilton, Blackstone, Congress, LaSalle and Morrison hotels.

The 1955 exposition will consist of 256 booths displaying all types of accident prevention equipment. All exhibit space in the Conrad Hilton hotel will be filled with products, equipment and services relating to the promotion of safety, health, first aid, sanitation and general welfare. Special space has been allotted to educational displays sponsored by the American Medical Association, National Bureau of Standards, National Society for the Prevention of Blindness, and Underwriters' Laboratories.

Instrument Training

ON SEPTEMBER 9, 10, 11, and 12, 1955, the Instrument Society of America will present its 1955 Maintenance Clinic in Los Angeles, California. Twenty-four subjects will be covered. Each student will have his choice of one of the three groups of eight subjects.

The material will be presented by personnel from the training departments of various factories. This program will be of benefit to men charged with the responsibility of maintaining industrial process and test control equipment. The program is especially advantageous since factory-offered training courses are not always available.

In each two-hour period a particular type of instrument will be described and its operation will be demonstrated. Then suggestions will be made on the proper methods of locating causes of improper operation. The student will also be instructed in the proper adjustments which must be made to restore the instrument to operation.

Servicing Training

Following this instruction, the students will be asked to apply their newly acquired knowledge by servicing actual instruments which have been temporarily disabled.

The Clinic will be held in Founders Hall of the University of Southern California in Los Angeles. Registration fee is $5.00 for members of organizations participating in the ISA conference (ISA, ASME, AIEE, IRE and SCMA). Fee for others is $7.50. To enroll, send registration fee to: ISA Instrument Maintenance Clinic, 1315 Allegheny Avenue, Pittsburgh 33, Pennsylvania.

KEEPING UP WITH...

HIGH-FREQUENCY LIGHTING SYSTEM

A NEW, efficient general lighting system, seen as a forerunner of many large industrial, commercial and institutional lighting installations, has been completed at Schenectady, N. Y. Installed in Union College's Alumni Memorial Field House, the system is the first application of high-frequency fluorescent lamp operation for the general lighting of a large area. Developed by the General Electric Company, the system calls for the operation of 490 eight-foot-long slimline fluorescent lamps on 400-cycle power. Increasing the frequency to 400 from the standard 60 cycles is accomplished by means of two 30-kilowatt rotating-type G-E package-unit frequency converters.

It is said that the new system represents one of the most economical methods for obtaining higher levels of light in high-bay areas.

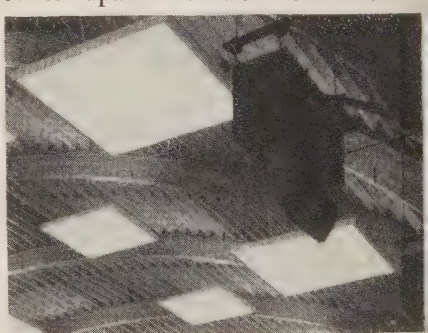
The system cost approximately 15 percent less to install than an incandescent-mercury lighting system and it offers an estimated 50 percent savings in annual operation and maintenance cost while producing 20 percent higher levels of comfortable light.

High-frequency permits operation of slimline fluorescent lamps at light levels from 20 to 50 percent higher than the same lamps operated on the conventional 60-cycle power. Installation of rotary frequency converters permits use of ballasts that are simpler, more efficient.

The lighting fixtures are eight feet square, but weigh considerably less than would comparable fixtures in conventional lighting installations. Each fixture contains 14 slimline lamps and each lamp produces 6000 lumens.

The lighting layout is so arranged that each of the two rotary converters operates the lamps to allow for approximately equal distribution of light. A simplified wiring system reduces the number of circuits from 84, for the lighting method originally considered, to 14 for the high-frequency design.

The primary power source for the system is 220 volts, three phase, 60 cycles, and the secondary is 575 volts, three phase, 400 cycles, connected to be under 300 volts to ground. Since 400 cycle power is used, it is possible to use a simple series capacitor and series choke for



ballast on alternate lamps. The split-phase circuit produces unity power factor to obtain maximum utilization of the converters.

Although somewhat similar 400-cycle systems have been developed by G. E. for airplane and bus lighting, the Union College lighting job is the first building interior to be lighted by means of 400-cycle power

For details, use Key #LE-1 on Inquiry Card on page 73.

LIGHTING & ELECTRICAL SERIES
other articles in July and August

ELECTRIC PLANT IN SMALL MODEL

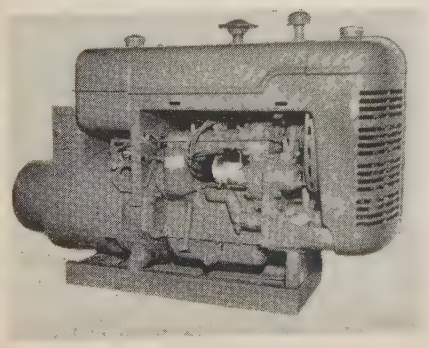
A NEW water-cooled electric plant of unusually high capacity for its small size is now in production by Universal Motor Company. Designated the Series 125, the plant has a capacity of 5500–6000 watts. It delivers this output in a size 25% smaller than older models by this manufacturer. Overall length is down from 51-1/16 inches to only 39-1/16 inches and weight has been reduced 32% from 995 lbs. to 670 lbs.

The highly compact unit is water cooled so installation may be made anywhere. It is powered by a 4-cylinder, 4-cycle L-head engine which operates at 1800 r.p.m. For smooth service the engine has its heavy-duty crankshaft counterweighted and precision balanced. The unit comes complete and fully self-contained ready for operation. It includes centrifugal type governor, high tension magneto ignition system and mounted fuel tank.

The heavy-duty generator is rated at 5500 watts continuous service and 6000 watts intermittent service. It is available in all voltages, AC.

The user has a choice of five types of control: manual starting, electric starting, remote control, fully automatic control and emergency automatic. With this latter control the plant starts itself automatically the moment normal power fails. It shuts itself off when power is restored.

For details, use Key # LE-2 on Inquiry Card on page 73.

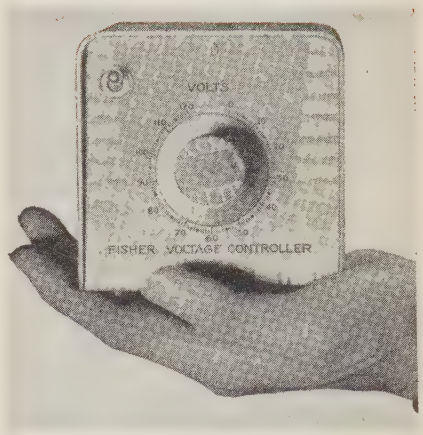


FLASHING SIGN

A BLINKER type illuminated sign to bring immediate attention to important dangers or information notices is available from Solux Corp. The glass panel of the Solux 1047Y is furnished with various wordings as specified by the customer. It utilizes two 25-watt lamps that flash off and on to attract attention.

The cabinet is made of steel which is sprayed with a satin aluminum finish. It can be mounted on ceiling or walls, on the surface or recessed. The glass panel can be removed for cleaning or relamping.

For details, use Key # LE-3 on Inquiry Card on page 73.

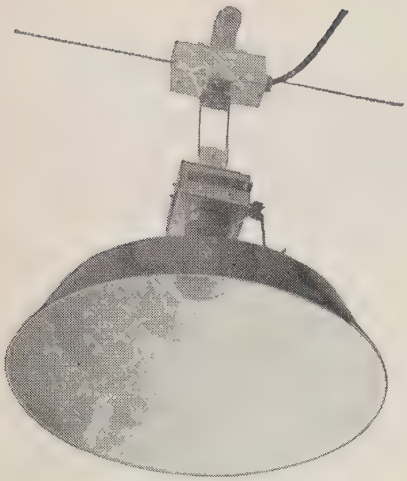


MIDGET VOLTAGE CONTROLLER

THE INCREASING number of electrical instruments and appliances in use in the modern laboratory can be headaches if the apparatus happens to require a voltage less than that at the available outlets. Voltage regulators, however, tend to be bulky and heavy.

Fisher Scientific Co. has solved the space problem with the new midget Voltage Controller. The instrument to be regulated is merely plugged into the convenient outlet in the rear of this small variable transformer; the Controller is then connected to a nearby power line. Rated at 1.25 amperes, it is continuously adjustable from 0 to 120 volts when the input is 115-volt 50/60 cycle a-c. A graduated scale on the face permits duplication of any setting. When not in use, the Voltage Controller is small enough to fit into any bench drawer.

For details, use Key # LE-4 on Inquiry Card on page 73.



FIXTURE LOWERING SYSTEM

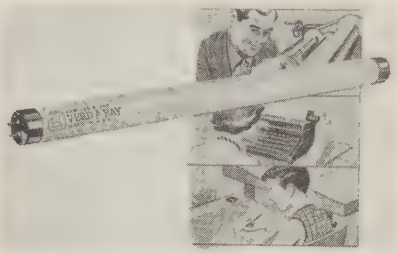
CABLEMATIC is an extremely simple elevating mechanism, which provides counter-balanced elevating, and lowering of lighting fixtures to eliminate ladders. One of the many novel features is the automatic elevating of the fixture after it is cleaned. Ladder accidents are eliminated, and there is no chance of a fixture falling. When a dirty fixture comes down a clean fixture goes up. Total time for elevating and lowering a fixture will not exceed 25 seconds, according to the Wil-Son Mfg. Co.

A single cable is used on an entire line of lighting fixtures. Both ends of the cable are positively anchored, and enough slack is provided to lower only one fixture. Thus any number of fixtures can be used on this one cable, and a single counter weight is all that is required. When the counter weight is pulled down all of the fixtures will be in operation. When the first fixture is pulled down the counter weight goes up. When the second fixture is pulled down the first fixture becomes the counter weight and it goes up. With this new approach very little cable is required, and as the cable lays along side of the electrical raceway, there is no cobwebbing of the ceiling, and no requirement of special hanger fitting and brackets.

For details, use Key # LE-5 on Inquiry Card on page 73.

NEW FLUORESCENT LAMP

QUICKER AND greater perception of fine detail, elimination of eye-strain in visual tasks and activities of all kinds, and reduced eye fatigue are claimed for a new fluorescent lamp called "See-E-Zee" being introduced by Verd-A-Ray Corporation. The new lamp is said to provide intense light, without glare, for greater visibility. Seeing tasks are made easier, production quality is improved, less work is spoiled, a greater measure of safety for workers is

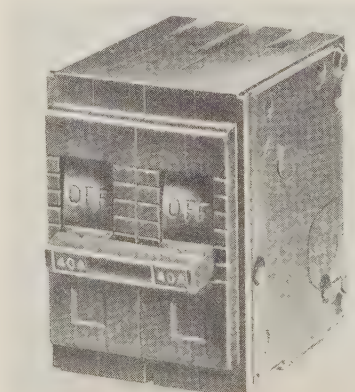


provided, inspection of finished products is more accurate and overall manufacturing costs are reduced when a better light is provided. The new lamp fits all standard fixtures and is available in all standard sizes.

For details, use Key # LE-6 on Inquiry Card on page 73.

TWO-POLE CIRCUIT BREAKER

A NEW TWO-POLE common trip circuit breaker, for use in panelboards and load centers, has been announced by Trumbull Components Department, General Electric Company. Designated Type TQL, the new two-inch breaker consists of two pole units with an interlocking trip mechanism assembled as a



single unit. It will fit load centers or panelboards designed to take one-inch Type R or Type TQL circuit breakers.

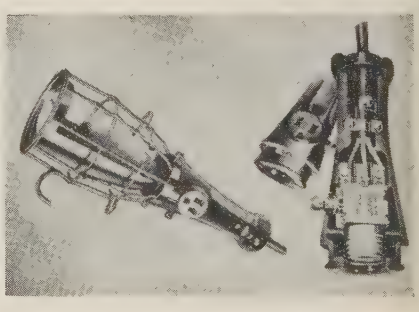
It is available in six ratings from 10 to 50 amperes for 120/240-volt a-c operation. It has an interrupting rating of 5000 amperes a-c. All ratings are listed by Underwriters' Laboratories, Inc.

Specifically designed to provide adequate protection for equipment and personnel wherever two-pole common trip circuit breakers are required, the new TQL should meet or exceed local construction code requirements in any section of the U. S., according to GE engineers.

Excessive current in either pole of the new Type TQL breaker trips both poles simultaneously; this greatly reduces the risk of accidental shock.

Thermal and independent magnetic trip elements provide protection against both short circuits and sustained harmful overloads. Momentary overloads, such as those caused by motor starting, will not trip the breaker. The new breaker is trip-free: that is, it will trip out even if the handle is held in against a circuit fault. The TQL is easy to install because of its plug-in construction and straight-in wiring for terminal connections.

For details, use Key # LE-7 on Inquiry Card on page 73.



GROUNDED LAMP GUARD

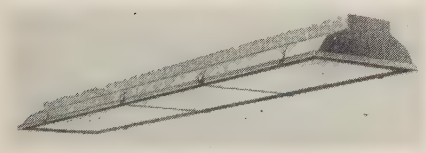
QUICK, SAFE grounding of power tools in garages, shops and other working areas is provided by the approved 3-wire convenience outlet in a series of portable lamp guards made by McGill Manufacturing Co., Inc. In this system the convenience outlet is designed to re-

ceive plugs having 2 parallel heads and U-shaped third blade for ground.

The cage is grounded by means of internal handle construction with a third terminal providing contact with the attached cord. With the convenience outlet in the handle, it's possible to ground saws, drills and other power tools that may be required at the working area. This can be done quickly and without extra extension cords. Grounded guards are available with either the standard closed end and reflector cage or with an open end cage, having a concentrating end lens and rotating reflector. With the latter, light can be beamed to otherwise inaccessible areas.

The phenolic handles are equipped with a Levolier switch, which is unconditionally guaranteed. The complete assembly is designed to resist oils, greases, some acids, flame, moisture and abrasion. The 3-wire handle also is available without the convenience outlet for grounding the lamp guard alone.

For details, use Key # LE-8 on Inquiry Card on page 73.

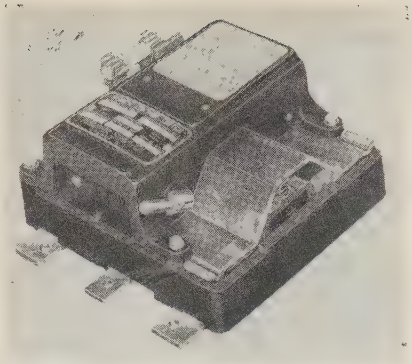


VAPOR-TIGHT FIXTURE

AN INDUSTRIAL lighting fixture designed and engineered to seal out dust, vapors and moisture is announced by Solux Corp. The Solux F72 is a shielded unit with a glass or plastic panel. The steel reflecting surface is finished in porcelain enamel.

The unit can be surface-mounted or by suspension. It can be used in conjunction with rapid-start, slimline or standard fluorescent lamps. The glass or plastic panel can be easily unclamped for cleaning.

For details, use Key # LE-9 on Inquiry Card on page 73.



REMOTE CONTROL SWITCH

A NEW adaptation of their standard Bulletin 920 Remote Control Switch is announced by The Automatic Switch Company. This switch is now available with a control line fuse and adapter. The adapter may be purchased as a separate item and added to an existing Remote Control Switch or as an integral part of a new switch. The 920 switches are Underwriters' Laboratories approved to 600 volts A-C, 250 volts D-C.

They provide accessible and convenient control lighting and power circuits. They may be actuated by push buttons, timers, toggle switches, or similar devices. They are designed for simple, low cost installation on panel boards and switchboards, and for separate installation on sub-panels.

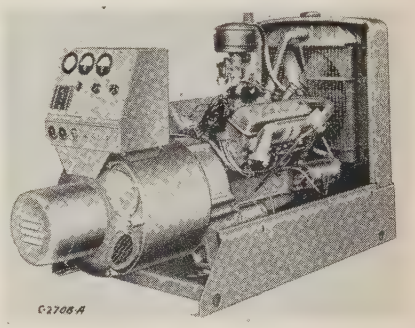
For details, use Key # LE-10 on Inquiry Card on page 73.

COOL MAGNETIC LIGHT

A HIGHLY versatile work lamp that utilizes cool fluorescent tube lighting is now being manufactured by the Standard Portable Cord Company, Inc. Called, the "Magic Cold-Lite," it provides non-glare illumination and allows convenient placement close to the work, because so little heat is generated. The unit has a magnetic base, with a powerful Alnico V guaranteed permanent magnet that furnishes instant anchorage on any ferrous metal, at any position (or through linoleum or similar covered steel desk and table tops).

A two button push-start switch gives immediate light from the two, four-watt fluorescent tubes. The swivel fixture allows complete maneuverability of the lamp.

For details, use Key # LE-11 on Inquiry Card on page 73.



TWO ELECTRIC PLANTS

TWO NEW SERIES (25 and 35 thousand watt) of Ford-powered electric generating plants are announced by D. W. Onan & Sons Inc. Because of their unusual compactness and low operating costs, these new electric plants, powered by new short-stroke, high-compression Ford industrial engines, are suitable for use in the construction industry and for emergency standby service in hospitals, hatcheries, public utilities, food-processing plants and many others.

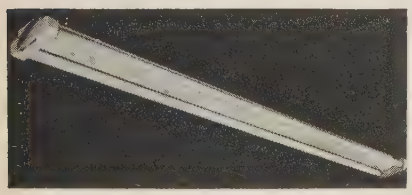
Series 25EC and 35ED have Onan-built generators specially designed with excellent motor starting ability to handle the many unusual electrical requirements demanded of modern emergency equipment. They are revolving field generators, have 2% (plus or minus) voltage regulation and 3-cycle frequency regulation, and are conservatively

rated for continuous service. Long life features include: Self-aligning semi-flexible drive disc, drip-proof construction, all-climate insulation, constant pressure brush springs, double-sealed prelubricated ball bearing and automatic voltage regulator. All standard voltages are available for 60-cycle, 1-phase and 3-phase models.

Both of these new series are available in either fully housed or unhoused models. All models are equipped with a rugged sheet metal control box mounted over the generator. Control features include engine instruments, high-water-temperature and overspeed shutdowns, A.C. voltage regulator, field rheostat and A.C. voltmeter. A circuit breaker and A.C. ammeter are standard accessories on the housed units, optional on the unhoused models.

Onan offers a selection of optional items: mounted fuel tanks for housed models, carburetors for natural gas or LPG, 1-quart reservoir tanks for standby plants, modifications for city water cooling and additional A.C. instruments for unhoused models.

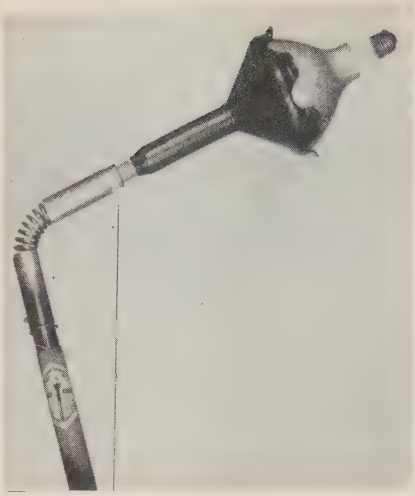
For details, use Key # LE-12 on Inquiry Card on page 73.



FLUORESCENT FIXTURE

A STREAMLINED and very shallow fixture for two fluorescent lamps has been developed by Grayco Products. The SLT 296 has a one-piece curved reflector for maximum lighting efficiency and a one-piece body for easy installation. The fixture has chrome ends for decorative effect and a grounding strap for continuous runs. It also comes in four-lamp models and is available in 4, 6 or 8 foot sections. The fixtures are designed primarily for surface mounting, protruding only three inches.

For details, use Key # LE-13 on Inquiry Card on page 73.



LAMP CHANGER WITH BROKEN LAMP EXTRACTOR

THE CHADSEY CORPORATION announce, as additions to their line of Safety Lamp Changers, rubber changer-heads to handle the PAR38-R40 reflector and projector type lamps of 150–300 Watt. Also, changer-heads are now available to handle the H-400 mercury lamps, as well as many other styles and wattages.

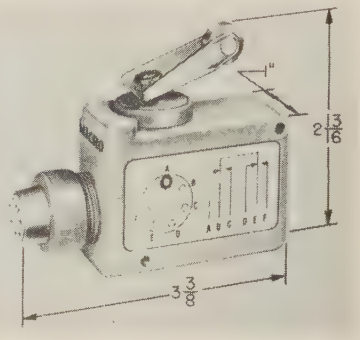
In use, the lamp changers act like the grip of the hand at the end of a pole. A couple of twists of the wrist brings the light bulb either in or out of the socket. By reversing the changer-head at the top of the white-ash poles the tapered end fits snugly inside broken lamp bases, and a twist brings broken part safely out of the socket. Both straight and angle adapters are available. The lamp changers are particularly adaptable for replacing lamps in industrial and commercial fixtures and others which require considerable reach.

For details, use Key # LE-14 on Inquiry Card on page 73.

ENVIRONMENT-PROOF SWITCHES

A NEW LINE OF completely sealed, environment-proof limit switches has been developed by MICRO SWITCH, a division of Minneapolis-Honeywell Regulator Company. They are designed for use in aircraft, mobile, marine and other industrial applications where environmental conditions are severe. In addition to being sealed, the new switches contain an inert gas that prevents their operations from being affected by atmospheric changes or severe environmental conditions.

The switches (designated series "EP") are light-weight. They offer a variety of electrical rating and circuitry selections, and are available in either side- or bottom-mounting designs. They conform to vibration and shock-resistance tests and meet immersion tests. Bottom-



mounting types are designed to be interchangeable with AN3217-model switches with respect to the operating point. All of the new switches have their circuit diagram printed on the side to simplify wiring.

For details, use Key # LE-15 on Inquiry Card on page 73.

VERSATILE EXIT SIGNS

THE PERFECLITE CO., manufacturers of illuminated exit signs and incandescent lighting for commercial and institutional work, are introducing a new, hinged, surface

type exit sign which is adaptable to a wide variety of building requirements. With the aid of interchangeable parts this one basic die-formed unit can be quickly converted to either single or double face use, and is easily mounted from the top, back, side or from a pendant. A concealed pivot in the door simplifies re-lamping. All metal parts are finished in hard baking enamels, and are completely rust-proof. Two face styles are available: a hinged metal stencil face with 6" letter on a fired green or read glass backing, or 6" letters on a fired ceramic glass panel, in four color combinations.

Perfeclite also manufactures a die-formed recessed type exit unit designed specifically for easy installation and servicing. It is available in the same two face styles as their surface type model. All their signs are Underwriters Laboratories, Inc. approved and comply with The National Electrical code.

For details, use Key # LE-16 on Inquiry Card on page 73.

VOLT-AMMETER ACCESSORY

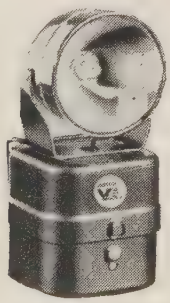
TWO IMPORTANT new features incorporated in the new Amprobe Energizer Model A-40 are announced by Pyramid Instrument Corp. This accessory makes possible instant current and voltage readings at the wall outlet, when used in conjunction with a snap-around volt-ammeter.

One innovation is the providing of receptacles for measuring line voltage at the outlet under actual load conditions while the appliance is connected to the line. Another new feature is the heavy duty construction which increases the capacity to 25 amps for direct current readings, and 10 amps for 10x sensitivity readings.

The new Amprobe Energizer performs three functions: 1) It serves as a "split" plug to divide double-conductor line cords at the outlet for a quick snap-around ammeter reading. 2) It can increase split core ammeter sensitivity by ten times for precise readings on small appliances and fractional h.p. motors. 3) It also makes it possible to measure line voltage at the outlet while the appliance is connected to the line.

The Amprobe Energizer is first plugged directly into the ordinary outlet receptacles. Then the motor or appliance cord is plugged into one of two current-reading positions: direct ampere reading or 10x sensitivity. The current reading is taken by snapping the jaws of the Amprobe snap-around volt-ammeter through the Energizer ring. Voltage readings are taken by plugging the voltage test leads into the voltage receptacles provided on the Energizer.

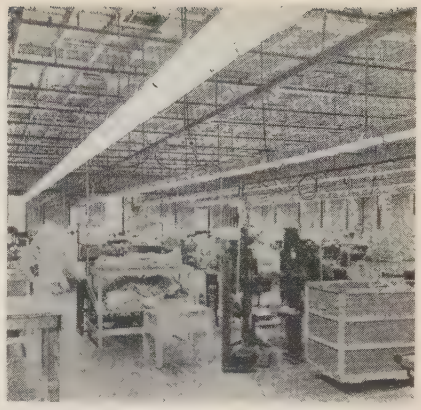
For details, use Key # LE-17 on Inquiry Card on page 73.



MIDGET SEARCHLIGHT

A NEW portable hand lantern that is of unusually small size but also powerful is announced by Justrite Mfg. Co. The V-6 has a pre-focused 6-volt bulb and a 2¾ inch reflector. The lantern measures only 5⅞ x 3 x 3 inches. The polished chrome adjustable headpiece swings in a 90 degree arc. The handle folds away for convenient storage.

For details, use Key # LE-18 on Inquiry Card on page 73.



INDUSTRIAL FIXTURES

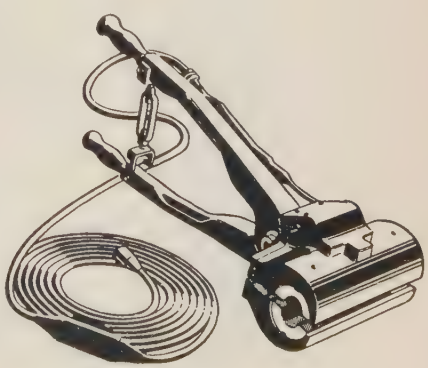
CONTROLLED brightness-contrast ratios are now applicable for production, as they have been to office and school lighting for the past five years, according to The Edwin F. Guth Co. The company's new "Wyte-Liners" are all white, inside and outside. As a result, strong shadows and strong contrasts are avoided, the gloom is taken off the ceiling, and the brightness ratio becomes a determinable factor.

The white reflector surface is of 300° Permalux or Porcelain Enamel. The fixtures are available in 2 and 3 conventional 40W light units, for 4' and 8' Slimline Lamps and in 4' and 8' lengths.

For details, use Key # LE-19 on Inquiry Card on page 73.

CABLE VULCANIZER

A NEW electrically operated cable vulcanizer, reported to weigh only 16 lbs., less molds, yet capable of making repairs on cable up through two inches in diameter, has been developed by the Joy Manufactur-



ing Company. Available for use on standard A.C. and D.C. voltages with a wattage rating of 1000, these new units are designed to make quick "on the job" jacket repairs or to replace insulation and jacketing when splices are required. Manufacturer also states that aluminum molds for use with these vulcanizers have been developed to cover most standard and many special types of cord and cable.

For details, use Key # LE-20 on Inquiry Card on page 73.

HEAVY DUTY CORDS

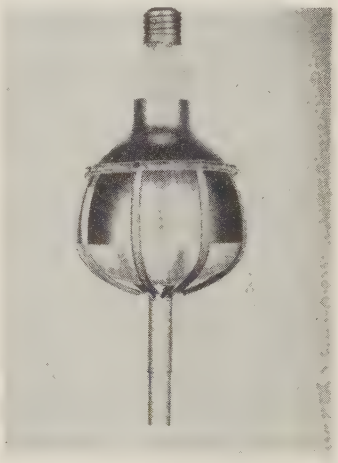
PORTABLE electric cords, designed for heavy duty use in mills and factories, both indoors and outdoors, are offered by the Diamond Wire & Cable Co. Engineered for toughness and oil resistance, the Type MD Red-D-Prene cords have a red Neoprene sheath that is long wearing and is readily identifiable. The white, soft textile centers provide maximum flexibility and moisture resistance. The portable cords carry the Underwriter's Laboratories seal and are especially suitable for auto, chemical and food plants, oil refineries, ship yards, steel mills, etc.

For details, use Key # LE-21 on Inquiry Card on page 73.

CHANGER FOR HIGH-BAY REFLECTOR LAMPS

A NEW lamp changer head, designated 155-C, and built especially for the R52, 500-watt lamp being used in high-bay reflector lighting is announced by the Electrical Division of McGill Manufacturing Co., Inc. Flexible, rubber-covered metallic fingers, held together at the top by a coil spring, slip over the lamp easily and grip it firmly for removal or installation.

The lamp changer head is used with the McGill standard lamp



changer pole, made in 5-foot, interchangeable sections. Sections are securely locked together by a spring-actuated button which also permits quick disassembly. Each section is insulated for positive protection against shock from exposure on contact of changer pole or head to live wires. Use of the lamp changer pole and head permits replacement or removal of lamps up to a recommended limit of 30 feet.

For details, use Key # LE-22 on Inquiry Card on page 73.

LUMINOUS PANEL CEILING

A COMPLETE, wired electrical package, combining light sources and ceiling as one, is announced by Luminous Ceilings, Inc. This entire pre-wired, pre-cut system locks into a pre-punched steel structural member, fastened to, or suspended from

the true ceiling or slab. The top half of the vertical raceway carries sets of sockets—allowing the mounting of one, two, or three banks of 8′ lamps above an 8′ section of track. The ballast is mounted on the vertical raceway at the same level as the socket banks. Accessibility to ballast leads and wires from the tracks are gained through a metal door beneath the ballast in the lower section of the vertical raceway, where wire nuts secure the connection.

For details, use Key # LE-23 on Inquiry Card on page 73.

Dry Battery Manufacturers

NINE DRY BATTERY manufacturers met recently for the purpose of organizing a Dry Battery Section in the National Electrical Manufacturers Association.

Officers

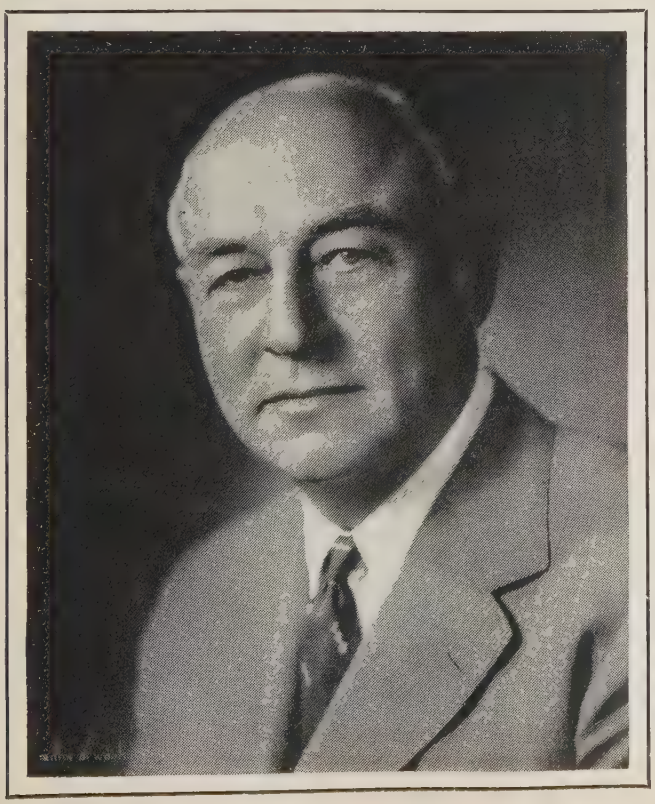
Abraham I. Barash, executive vice president of Bright Star Industries, Clifton, N. J., was elected chairman; Fred J. Kirkman, executive vice president of the Burgess Battery Company, Freeport, Illinois, was elected vice chairman, and F. J. Wolfe, manager of the quality and specifications division, National Carbon Company, Cleveland, a division of Union Carbide and Carbon Corporation, was chosen as chairman of the general engineering committee.

AN IMPORTANT MESSAGE FROM THE SECRETARY OF THE TREASURY

A THREE-WAY PARTNERSHIP THAT BENEFITS EVERYBODY

How the public, the magazine publishers and the U. S. Government cooperate to help keep the nation's economy growing always stronger

As a reader of this magazine, the chances are that you belong to a "three-way partnership" dedicated to intelligent saving and a sound economy. For you probably buy United States Savings Bonds. Nearly 40 per cent of the families in America own them. Most Bond-owning families have saved enough in this way to pay for a serious illness, to provide something for old age, to make a down payment on a house or take a long trip. And perhaps most important, these families have the wonderful feeling of security that the ownership and holding of these Bonds bring.



Americans today are buying Savings Bonds at an annual rate of more than $5,000,000,000. In the time it takes you to read this page, approximately one minute, America will buy $10,000 worth of Series E and H Bonds!

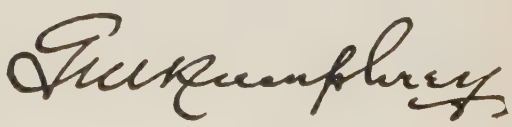
How, you may ask, did this come about?

It came about through a great program of voluntary cooperation with the Treasury Department on the part of many groups, organizations and citizens. The magazine publishers have from the beginning been among the major supporters of the Bond program. They contribute millions of dollars' worth of advertising space each year.

Full credit for making Bond-buying a national habit is due that "three-way partnership"—the American citizen, the Government, and the volunteer groups, such as the magazine publishers, who bring buyer and seller together through the pages of their publications.

All three partners will profit further by continuing to help increase the nation's saving through the sale of Savings Bonds.

For so effectively promoting the national welfare I wish, on behalf of the Government, to extend to the magazine publishers our most sincere thanks.



Secretary of the Treasury

New, radio-active, automatic fire guard!

C-O-TWO PRE-DETECTOR SYSTEM

Each pre-detector head protects up to 3,600 square feet of area ... harmless radio-active element utilizing ionization chamber principle quickly detects all forms of fire ... requires only simple two-wire circuit and insignificant wall space for controls.

This completely new and positive means of spotting fire is just what you've always needed and wanted . . . detects in the earliest stage, invisible combustion gases, visible smoke, slow smoldering, as well as open flame. The C-O-TWO Pre-Detector System is simple to install, extremely economical to maintain and doesn't depend on thick smoke or heat for actuation.

As many pre-detector heads as necessary can be connected together in a single circuit and up to 16 separate circuits or spaces handled by one system. With a single circuit the pre-detector heads are connected directly to the fire indicating cabinet, while with multiple circuits the pre-detector heads are first connected to one or more space indicating cabinets capable of visually showing by number the exact location of the fire. Relays perform such functions as sounding alarms, closing fire doors, shutting down ventilation and releasing fire extinguishing systems.

The C-O-TWO Pre-Detector System has been subjected to extensive testing and carries Underwriters' Laboratories, Inc. listing, as well as Factory Mutual Laboratories approval. Proven pilot installations have been made in such diversified properties as a television station, an electric power company network analyzer room, a railroad signal tower, an airline flight training equipment room and the offices of an insurance company.

Don't take unnecessary chances any longer . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts about this new C-O-TWO Pre-Detector System today!

Pyrene

PYRENE — C-O-TWO

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Sales and Service in the Principal Cities of United States and Canada

C-O-TWO

COMPLETE FIRE PROTECTION

portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

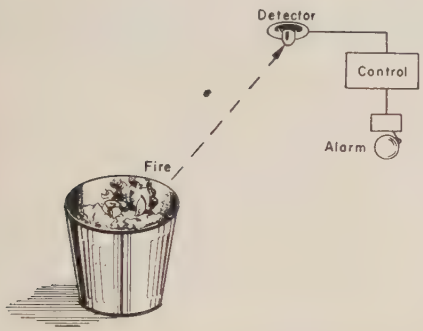
CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

(For details, use Key # J-13 on card on page 73)

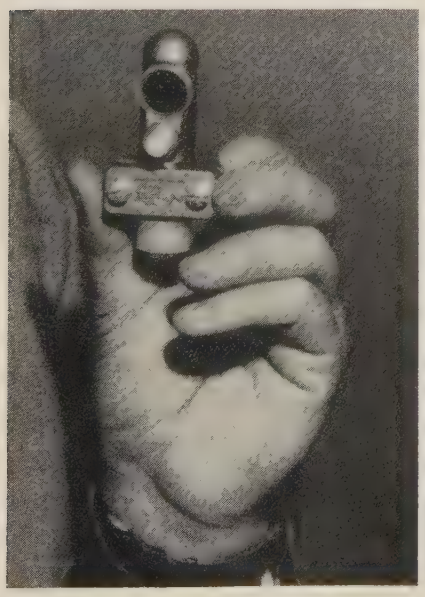
The Fire Front

Practically Fireproof . . .

Thanks to Instant Electronic Detector



Electronic eye of fire detection system.



Heart of system is photo-conductive cell.

A VISUAL FIRE DETECTOR, that detects fires in aircraft engines with the speed of light, is now being installed on the Lockheed C-130, the Air Force's first turbo-prop combat transport plane.

The fire detector is being used to protect all 4 engines of the C-130, and also its gas turbine compartment. The new plane has a cargo capacity of 20 tons and is noteworthy for its ability to take off and land in small areas. The detector system, with its exceptionally short reaction time, becomes increasingly important in the high-speed jet age. Fire detection systems previously available were many times slower.

Complements Extinguishing System

The visual system is a complement to the explosion and fire extinguishing system recently developed for the protection of fuel systems of combat planes, and now being installed on military aircraft. *(See page 53 of Safety Maintenance for June, 1955.)*

In the plane whose engines are to be protected by the visual system, the detecting elements (detectors), often as few as one or two, are installed in each compartmented zone of each engine. As many as 9 detectors can be used in a single detection system. However, it is seldom that this many are needed.

The detector consists of a unit composed of the cell, its cover and its mounting. The control unit that interprets the signal from the detectors can be located anywhere in the airplane outside the fire zones. When the detecting elements indicate a fire, the control unit flashes a warning light in the cockpit which advises the crew that a fire has started in a particular engine.

The heart of the new system is a miniature, rugged, lightweight, photoconductive cell, developed after years of research for the specific purpose of fire detection. Infrared sensitive, the photoconductor, or electronic eye, is ideally suited for spotting fires because infrared is emitted in considerably larger quantities by fires than by any other wavelength of radiation.

The photoconductive cells are not to be confused with photoelectric or

photovoltaic cells heretofore used on aircraft. The new cells, unlike conventional photoelectric devices, have no internal mechanical structure, hence their resistance to vibration is at a maximum, and insofar as can be determined, they have an unlimited life. Essentially, they consist of a glass envelope internally coated with infrafed sensitive material.

Indicate Flame Radiation

The cells accurately indicate, by very rapid resistance changes, the varying amounts of radiation emitted by a flame; they detect by responding to the flame flicker as does the human eye when it sees a fire. When a DC voltage is applied to the cell, the modulated radiation from the flame results in a pulsating signal being transmitted to the control unit, which, being sensitive to this signal, actuates an alarm or fire extinguishing system.

Eight years of intensive development have produced high temperature-resistant cells, capable of continuous exposure at temperatures up to 400° F while maintaining rated sensitivity. Available data further indicates that short interval exposures, approximately 1-half hour, are possible up to 550° F with reasonable response and no permanent reduction in sensitivity, although this is not at present a recommended condition for installation. Protection of compartments where the operating temperature is expected to exceed 400° F may readily be accomplished by installing the detectors in adjacent cooler areas and allowing them to scan the excessive temperature zones through small quartz windows.

Other Detection Advantages

The aircraft fire detection systems are designed to operate on 115 volts AC 400 cycles. Requiring no flame contact or temperature increase, the detector responds the instant it "sees" the radiant energy from the smallest of fires. This can be within micro-seconds of the start of combustion. Thermal fire detectors, are necessarily countless times slower even when enveloped in flames.

Maximum efficiency of coverage is obtained by an absolute minimum number of detectors, in most cases, only one or two per zone. Effective positioning of detectors is not the critical problem it has been in the past; the engineer charged with the design of the installation no longer must attempt to outguess the fire, a 3-dimensional phenomena, with detection systems having one-dimensional characteristics at best.

The new unit has a fast reset. Requiring no heat dissipation, the system provides instantaneous fire-out indication.

The sturdy, potted construction of the detectors makes them well suited to withstand the exacting conditions of power plant operation and maintenance. The minimum detector requirement, coupled with the flexibility of their location, still further decreases the possibility of damage. The detectors have accumulated thousands of hours of flight time without failure or false alarm under the most severe conditions of vibration to be encountered in today's airplanes.

Pictures by courtesy of Electronics Corp. of America.

Fire Trend Up

ESTIMATED FIRE LOSSES IN THE United States during June amounted to $70,828,000, the National Board of Fire Underwriters has reported. This loss represents an increase of 8.1 percent over losses of $65,533,000 reported for June, 1954, and a decrease of 1.3 percent from losses of $71,789,000 for last May (1955).

Losses for the first six months of 1955 now total $469,757,000, an increase of 3 percent over the first six months of 1954, when they amounted to $455,990,000. These estimated insured losses include an allowance for uninsured and unreported losses.

Fire Progress

GREAT PROGRESS is being made in the never-ending battle against damage from fire and explosion. Members of The American Society of Mechanical Engineers, holding their semi-annual meeting in Boston, heard proof of that contention from Arthur L. Brown, chief engineer, Factory Mutual Engineering Division. Mr. Brown reported that although preventive measures are the first line of attack against fire, the greatest factor in cutting losses has been increased skill in holding down damage once the fire has started.

An outstanding recent improvement in automatic sprinkler protection is the directional wide-angle spray nozzle, which was described as giving more even distribution of water and more consistent breakup of the water, without wetting the ceiling. Actual fire tests have provided conclusive evidence, Mr. Brown said, that wetting the ceiling was of less importance than even distribution of water. One result has been greater leniency in the spacing of automatic sprinklers and in water supply requirements.

The fire problem has been complicated, he added, by recent trends in materials handling methods and the use of high piling for more complete utilization of storage space. For the first time the needed density of applied water has been defined in gallons per minute per square foot of floor area occupied by various piling arrangements.

He described test and research procedures for the formulation of safe practices for the design, construction and operation of paint- and enamel-drying ovens. One of the phases of this work, he said, was the development of flammable-vapor indicators, now widely used but still capable of greater application. Another phase is "explosion venting," which is a means of reducing the effect of explosions. This may be provided by properly placed window areas large enough to release the pressures produced.

Safe Maintenance for . . .

PORTABLE FIRE EXTINGUISHERS

PART I This is the first of 3 installments of the *"Safety Code for Inspecting, Recharging and Maintaining Portable Fire Extinguishers"* prepared by and reprinted through the courtesy of the Fire Equipment Manufacturers' Association, Inc.

Scope and Purpose

The scope and purpose of this safety code are intended to insure proper inspecting, recharging and maintaining of portable fire extinguishers.

Application

This safety code shall apply to all types of portable fire extinguishers.

Definitions

Where the word "shall" is used, that provision is intended to be mandatory.

Where the word "should" is used, that provision is intended to be advisory or recommended good practice.

Pump Tank—The Fyr-Fyter Co.

Pump Tank—Miller-Peerless Mfg. Co.

PUMP TANK-Water Type

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, to make sure that they have not been tampered with or removed from their designated places, to detect any injuries, to see that they are full, and to see that the orifice of the nozzle is not clogged.

At least once yearly extinguishers shall be examined as to condition of pump and for deterioration or injuries due to misuse.

The pump shall be tested by operating it several strokes, discharging the solution back into the tank, then putting a drop of thin lubricating oil on the piston rod packing.

Extinguishers shall be kept full at all times and recharged immediately after use.

Recharging

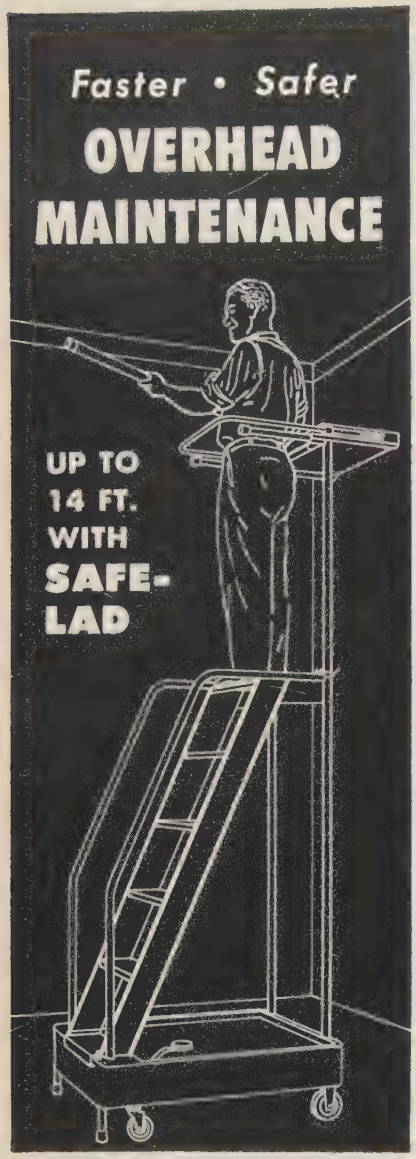
In recharging extinguishers with anti-freeze solution, the chemical supplied by the manufacturer shall be thoroughly dissolved in water outside the extinguisher in strict

Pump Tank—American-La France-Foamite Corp.

Pump Tank—Walter Kidde & Co., Inc.

Pump Tank—Pyrene, C-O-TWO

Pump Tank—The General Detroit Corp.



★ Automatic safety control locks truck when operator touches first step.

★ Provides waist high guard rail protection at all heights—on 4 sides—frees both hands.

★ SAFE-LAD rolls to job easily—on regular elevators—through standard doors. Base tray carries all supplies.

★ Stability tests exceed every requirement suggested for ladders by National Safety Council.

For complete specifications, write—

SAFE-LAD
Manufacturing Company

1001 S. E. Morrison • Portland 14, Oregon

(Use Key # J-14 on Inquiry Card on page 73)

accordance with instructions on the recharge package. The solution should be put through a fine strainer while pouring it into the extinguisher.

Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

Examine extinguisher head to make sure the threads are in good condition. Head should be held by four full threads. If charging more than one extinguisher at a time, the head should be replaced on the same extinguisher from which it was removed.

Inspect hose, head gasket and cartridge. If unserviceable, replace.

Check cartridge puncturing mechanism to be sure it is undamaged. If unsatisfactory replace mechanism, if removable, or replace complete head.

Extinguisher shall be filled with water to water mark on inside of shell. Do not fill above this mark.

Replace fully charged cartridge furnished by the manufacturer, and screw head tightly on extinguisher.

Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

CARTRIDGE OPERATED-

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, to make sure that they have not been tampered with or removed from their designated places, to detect any injuries, and to see that they are not empty, as well as to see that the orifice of the hose nozzle is not clogged. Examine extinguisher for physical damage to shell or seams. If extinguisher shows evidence of mechanical damage, corrosion or distortion of the shell due to freezing temperatures or from other causes, it may be unsafe for further use and shall be subjected to a hydrostatic pressure test.

While water type extinguishers do not require annual recharging, they should be inspected to assure that the water level is up to the proper mark. Extinguishers must be recharged immediately after use and must be protected from freezing temperatures.

Cartridges shall be removed and examined. All carbon dioxide pressure cartridges shall be weighed on an accurate scale to detect loss of carbon dioxide by leakage, and a new cartridge of the same make being used to replace any which shows a loss of ½ ounce or more from the original weight stamped on it.

Every five years extinguishers which have been in service shall be subjected to a hydrostatic pressure test to determine that they are still capable of safely withstanding the pressures which may be generated during operation.

Hydrostatic Pressure Test

Pressure shall be applied at a rate-of-rise to reach 300 pounds per square inch in approximately one minute.

Pressure of not less than 300 pounds per square inch and not more than 350 pounds shall be applied to hand types and a pressure of 400 pounds to wheeled types.

The extinguisher should be checked for leakage, distortion, or other signs of failure.

Pressure shall be held for one minute, after which pressure shall be released.

Any extinguisher which shows leakage, distortion, or other signs of weakness should be mutilated to the point where it could not be placed back in service, and then scrapped.

Extinguishers which do not show any of the faults noted may be recharged and returned to normal service.

(Continued on page 40)

Cartridge—Stop-Fire, Inc.

Cartridge—American-La France-Foamite Corp.

Cartridge—Badger Fire Extinguisher Co.

Water-Type

Cartridge—Pyrene, C-O-TWO

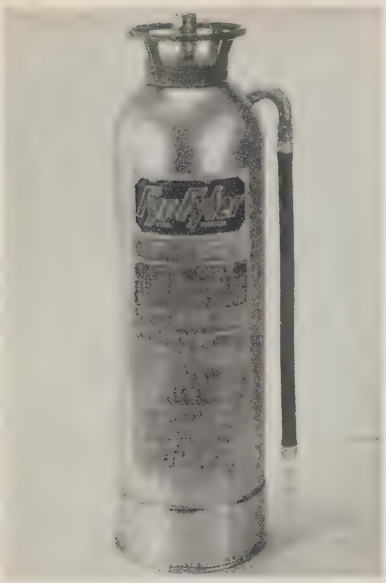
Cartridge—Elkhart Brass Mfg. Co., Inc.

Stored Pressure—Stop-Fire, Inc.

Cartridge—The General Pacific Corp. and The General Detroit Corp.

Cartridge—The Fyr-Fyter Co.

Cartridge—Walter Kidde & Co., Inc.



Cartridge—The Fyr-Fyter Co.

Cartridge—American-La France-Foamite Corp.

Cartridge—American-La France-Foamite Corp.

Cartridge—Pyrene, C-O-TWO

CARTRIDGE-OPERATED

Cartridge—Badger Fire Extinguisher Co.

Stored Pressure—Walter Kidde & Co., Inc.

Cartridge Operated Water Type (Cont'd)

Recharging

Thoroughly clean extinguisher interior and all parts with warm water. Run water through hose and nozzle, making sure there is no obstruction in either. Do not use rags, waste or anything which might possibly clog nozzle or screen.

Anti-Freeze Water Type

Inspection and Maintenance

Follow the same instructions as outlined for CARTRIDGE OPERATED WATER TYPE extinguishers.

Hydrostatic Pressure Test

Follow the same instructions as outlined for CARTRIDGE OPERATED WATER TYPE extinguishers.

Recharging

Follow the same instructions as outlined for CARTRIDGE OPERATED WATER TYPE extinguishers, but with the anti-freeze solution, the chemical supplied by the manufacturer shall be thoroughly dissolved in water outside the extinguisher in strict accordance with instructions on the recharge package. The solution should be put through a fine strainer while pouring it into the extinguisher.

Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

SODA-ACI

Hand Type—Pyrene, C-O-TWO

Hand Type—Stop-Fire, Inc.

Hand Type—The Fyr-Fyter Co.

Hand Type—Badger Fire Extinguisher Co.

Hand Type—Walter Kidde & Co., Inc.

Hand Type—The General Detroit Corp. and The General Pacific Corp.

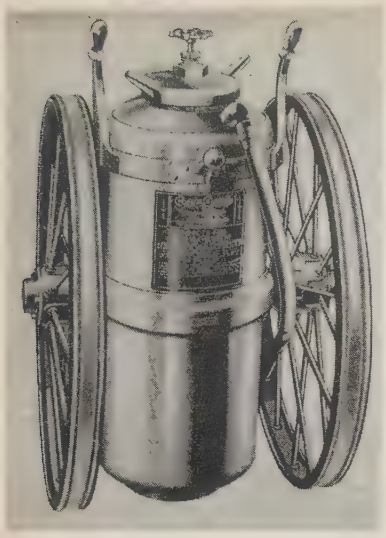
Hand Type—American-La France-Foamite Corp.

Hand Type—Elkhart Brass Mfg. Co., Inc.

Hand Type—W. D. Allen Mfg. Co.

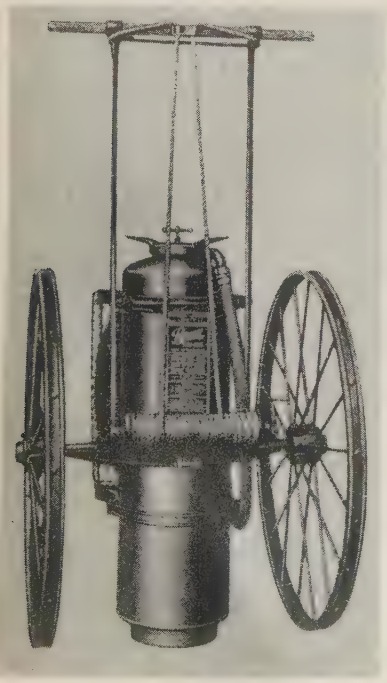
TYPE—Hand

Soda Acid Type-Wheeled



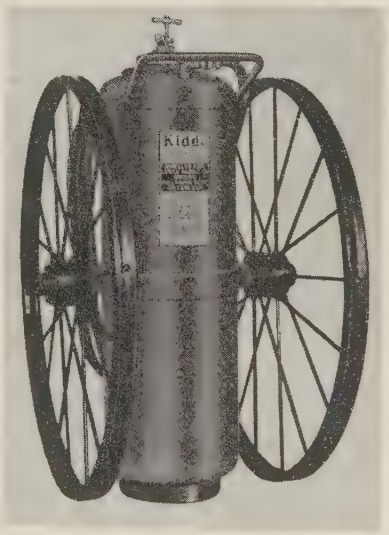
Wheeled Type—The Fyr-Fyter Co.

Wheeled Type—American-La France-Foamite Corp.

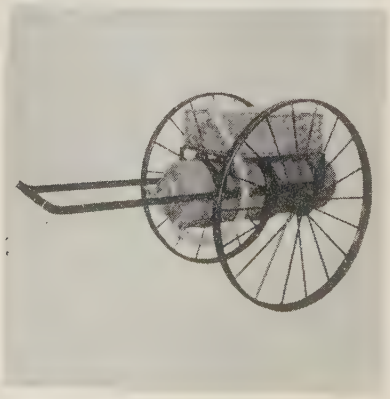


Wheeled Type—Pyrne, C-O-TWO

Wheeled Type—The General Detroit Corp.



Wheeled Type—Walter Kidde & Co., Inc.



Wheeled Type—Safety Fire Extinguisher Co.

HAND AND WHEELED SODA-ACID EXTINGUISHERS

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, to make sure that they have not been tampered with or removed from their designated places, to detect any injuries, and to see that they are not empty, as well as to see that the orifice of the hose nozzle is not clogged. Examine extinguisher for physical damage to shell or seams. If extinguisher shows evidence of mechanical damage, corrosion or distortion of the shell due to freezing temperatures or from other causes, it may be unsafe for further use and shall be subjected to a hydrostatic pressure test.

Soda-acid type extinguishers shall be recharged annually as well as immediately after use and must be protected from freezing temperatures.

Extinguishers which have been in service shall be subjected to a hydrostatic pressure test every five years to determine that they are still capable of safely withstanding the pressures which may be generated during operation.

Hydrostatic Pressure Test

Pressure shall be applied at a rate-of-rise to reach 300 pounds per square inch in approximately one minute.

Pressure of not less than 300 pounds per square inch and not more than 350 pounds shall be applied to hand types and a pressure of 400 pounds to wheeled types.

The extinguisher should be checked for leakage, distortion, or other signs of failure.

Pressure shall be held for one minute, after which pressure shall be released.

Any extinguisher which shows leakage, distortion, or other signs of weakness should be mutilated to the point where it could not be placed

back in service, and then scrapped.

Extinguishers which do not show any of the faults noted may be recharged and returned to normal service.

Recharging

Thoroughly clean extinguisher interior and all parts with warm water. Run water through hose and nozzle, making sure there is no obstruction in either. Do not use rags, waste or anything which might possibly clog nozzle or screen.

Examine extinguisher head to make sure the threads are in good condition. Head should be held by four full threads. If charging more than one extinguisher at a time, the head should be replaced on the same extinguisher from which it was removed.

Inspect hose and head gasket. If unserviceable, replace.

Recharges consist of bicarbonate of soda and 66° Baumé sulphric acid of standard specifications and properly compounded by the manufacturer.

Recharges other than those furnished by the manufacturer should not be used in these extinguishers, because they may be compounded of substandard ingredients, and in excess of or deficient in quantity.

Dissolve the bicarbonate of soda in water in a separate container, in accordance with the instructions on the recharge package. Stir until thoroughly dissolved. Empty solution into extinguisher, filling to the water mark on the inside. Solution should not be above the water mark. If the bicarbonate of soda is dissolved in the extinguisher, care should be taken to avoid injury to the extinguisher interior coating when stirring.

Replace old bottle with new acid charge. Make sure the stopple in the bottle is loose and replace bottle in the cage in extinguisher. If bottle in recharge package is not of same size as the bottle in used extinguisher, transfer the acid to old bottle. Sulphuric acid is dangerous to handle and care should be taken not to spill acid on person or materials. Replace extinguisher head, screwing down tightly.

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The Acknowledged Leader in the Lens Cleaning Field
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Cortland 2, N. Y.
(For details, use Key # J-15 on card on page 73)

It is important that acid bottles and their corresponding stopples, when replaced, should be exact duplicates of those originally provided with the extinguishers as otherwise the discharge may be impaired or the extinguisher rendered inoperative.

Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

Editor's Note: The remainder of the Fire Equipment Manufacturers' Association's "Safety Code for Inspecting, Recharging and Maintaining Portable Fire Extinguishers" will be published in the October and November issues. Part 2 will cover: Vaporizing Liquid (hand pump and stored pressure), Chemical Foam (hand and wheeled), and Carbon Dioxide (hand and wheeled). Part 3 will cover: Dry Chemical (hand and wheeled types).

Fire Prevention Week

DON'T GIVE Fire A Place To Start!" is the theme for this year's Fire Prevention Week, October 9–15. Proclaimed by President Eisenhower in the United States and by Governor-General Massey in Canada, Fire Prevention Week dates back nearly half a century and is the oldest and most widely observed of all special weeks.

Universally aimed at stimulating public fire safety consciousness, Fire Prevention Week will be observed in thousands of communities throughout North America from the largest cities to the smallest rural unit. Last year's Fire Prevention Campaign was one of the most successful on record. Again this year extensive fire prevention programs will be launched during this traditional week.

Wholly a public service effort, it is sponsored nationally by the National Fire Protection Association in cooperation with the International Association of Fire Chiefs and the United States Department of Agriculture.

Safety and Special Purpose
Plain or Reflectorized
SIGNS for EVERY NEED!
SAFETY FIRST — BE — CAREFUL
NOTICE THESE DOORS MUST BE KEPT CLOSED
HELP KEEP THIS PLACE CLEAN
THINK ACCIDENTS ARE AVOIDABLE FORGET THE ALIBI.
BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
EXIT
DANGER — NO — SMOKING
WARNING CURRENT — ON —
CAUTION KEEP AISLES CLEAR
NO PARKING AT ANY TIME
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No matter what your sign requirements may be, you can depend on Sargent-Sowell! We are nationally known for our dependability and quality, and we maintain a complete inventory of more than 5,700 standard Industrial, Construction, Safety, Municipal, and Plastic signs.
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(For details, use Key # J-16 on card on page 73)

Fire Alarm Standards

TWO NEW AND revised fire safety standards in the electrical series have been published by the National Fire Protection Association, it was announced by Robert S. Moulton, Technical Secretary of the Association.

Officially adopted by the NFPA at its Annual Meeting, each of the standards is now available in pamphlet form from the NFPA, 60 Batterymarch St., Boston. They will also be included in the 1955 edition of the National Fire Codes, published in September of this year.

The standards, by numerical designation and title, are: No. 71, Standards for the Installation, Maintenance and Use of Central Station Protective Signalling Systems for Watchman, Fire Alarm and Supervisory Service (26 pgs.—price 25c); No. 72, Standards for the Installation, Maintenance and Use of Proprietary Auxiliary, Remote Station and Local Protective Signalling Systems for Watchman, Fire Alarm and Supervisory Service (40 pgs.—price 35c).

NFPA standards, prepared by technical committees, representative of all interests concerned, provide guidance for the reduction of loss of life and property by fire. Although purely advisory so far as the National Fire Protection Association is concerned these standards are widely used as a basis for laws, ordinances and regulations issued by fire marshals and other authorities responsible for the public safety.

Industrial Sanitation Management Association

THE Industrial Sanitation Management Association met recently to elect new officers and formulate plans for a renewed membership drive and expanded service to members.

The following were elected:

President—Sydney Brierly, East-

man Kodak Co., Rochester, N. Y.; Vice Pres.—Daniel Granato, Sharp & Dohme, Inc., Philadelphia; Treasurer—E. D. Ingalls, Hoffman-La-Roche, Inc., Nutley, N. J.; Secretary—John Powell, Powell Magazines, New York City. These officers are also on the Board of Governors.

Purpose

The aim of the Association is to crystallize and more forcefully bring to the attention of management the important role sanitation plays in industry as a separate function of management. The Association has chapters in the East, Midwest and West Coast.

A committee, to be headed by John Wright of Lederle Laboratories, was set up to revise the By-Laws regarding eligibility for membership, since it was felt that supervisors and foremen of sanitation, as well as department heads, should be eligible.

Course in Packaging & Materials Handling

THE Society of Industrial Packaging and Materials Handling Engineers' 1955 "Short Course" will be held September 19–21 under the joint sponsorship of the Society and New York University at NYU's College of Engineering, 191st Street and University Avenue, New York. Plans for the Course have been developed over a period of 6 months by a committee headed by Dean Wilbur McKee of the University and Allyn C. Beardsell of Container Laboratories, Inc.

Subjects to be covered will provide engineers with an intensive review of the basic technical principles used in packaging and materials handling, a survey of modern application of these principles, a summary of recent developments in the field and reports of research projects now underway to provide continued progress and constant improvement.

The Course will also include a one-day session of special interest to management, pointing out the relation of packaging and materials handling engineers to other departments within an industrial organization. In addition, there will be a 1-day conference on consumer packaging and its importance to modern merchandising.

Along with its Short Course, the Society is holding its annual Industrial Packaging & Materials Handling Exposition at the nearby Kingsbridge Armory.

Registration for the Short Course or parts of it can be made through the national headquarters of the Society of Industrial Packaging and Materials Handling Engineers, 111 West Jackson Boulevard, Chicago 4. Registration for the full session is $30 for SIPMHE members, $40 for non-members.

Throat
DRY, PARCHED,
DUSTY?
YOU NEED . . .
DUPOR No. 40
The respirator whose 40 sq. in. double filters provide double protection against pneumoconiosis and silicosis producing dusts. Double comfort in breathing, too! Light, less than 5 ounces—compact—sturdily constructed. U. S. Bureau of Mines approved. Order sample today, $3.00 postpaid.
H. S. COVER, SOUTH BEND, IND.
"Respirators for Industry since 1894"
(For details, use Key # J-17 on card on page 73)

Vehicle Inspection Film

A NEW COLOR FILM "One Way Left" represents the experience of many state officials in organizing and operating successful inspection programs. This film should be of special interest in states which are introducing or contemplating the introduction of bills concerning periodic motor vehicle inspection.

"One Way Left" may be borrowed from state motor vehicle departments without cost except for shipping charges. Prints may be purchased for $125.00 each from the American Association of Motor Vehicle Administrators, 912 Barr Building, Washington 6, D. C.

Fan Engineering Film

THE RELEASE of a new 16mm. sound film in color covering "Industrial Axial Flow Fans" is announced by Aerovent Fan Company, Inc. Prepared as a part of an educational program for the recent Industrial Ventilation Conference, the movie was filmed and produced in Aerovent's Engineering Department and describes the three basic types of axial flow fans, their inherent characteristics and methods of testing employed in modern fan engineering laboratories.

In addition, the movie discusses the subject of static pressure limitations of propeller fans, the common misconception regarding noise levels of these units—as well as an extensive treatise on the method of determining reliable fan performance and rating data. The film is free of any direct reference to Aerovent equipment and contains no advertising or commercial narrative.

Recommended for engineering, architectural, plant maintenance and building contractors meetings, the movie runs 12½ minutes and can be shown on any 16mm. sound projector. For complete details or information regarding availability, write Aerovent Fan Company, Inc., 768 East Ash Street, Piqua, Ohio indicating desired dates for showing and advising length of time required to complete your program and return film. Arrangements should be made well in advance of date of use, and it is suggested that an alternate date be selected to permit scheduling of duplicate requests.

Research Film

A NEW FOURTEEN-MINUTE motion picture designed to create greater public understanding of the national significance of continuing scientific and industrial research has been announced by Henry G. Riter, 3rd, president of the National Association of Manufacturers.

The 16 mm. sound film entitled "Industrial Research—Key to Jobs and Progress" will be released for club, school and industry showings and later for public service television use. The motion picture has been largely re-edited in documentary form from NAM's television newsreel "Industry On Parade" to tell the story of industrial research.

"No longer can the United States afford to be indifferent to the shortage of technical personnel in this country," Mr. Riter declared. "Its leadership in the past is being clouded by the great efforts of Russia to catch up.

"But as our new motion picture shows, industrial research is also the spark-plug which keeps our economy moving at top speed. It revolutionizes our way of living in every generation and helps provide the new and better job opportunities Americans demand."

The new motion picture may be borrowed by clubs, schools and industry on payment of a nominal handling charge ($1.50) or a print may be purchased for $35 from the Film Bureau, National Association of Manufacturers, 2 East 48th Street, New York 17, N. Y.

From the Ground Up

(Continued from page 19)

on the ground is the chief aim during 1955 of squadron members. A sign with the gruesome words "While you have been in this room two people have been killed in traffic accidents," greets all visitors to a "Room of Horrors" that is helping bring safety-consciousness to squadron members at the base.

The "Room of Horrors" contains many photographs and printed reminders of highway tragedies. All squadron members who go on leave are taken through the room, then given printed pamphlets on safe driving.

The safety program is already bearing fruit. Captain Harry J. Scott, squadron adjutant explains: "This is demonstrated by the fact that over the Christmas holidays, not one man assigned to the squadron was involved in any type of accident. The men are vitally aware of their collective and individual responsibilities to themselves, this community and the Air Force. By vigorous application of safe driving practices, we hope to equal our fine safety record in the air."

Pictures by courtesy of Kelly Air Force Base.

Safety Institute

SEPTEMBER 20, 21, and 22 will see over a hundred safety engineers and management representatives meet on the Champaign-Urbana campus to discuss current industrial safety problems. The conference is co-sponsored by three chapters of the American Society of Safety Engineers located in Chicago, Peoria, and St. Louis, and the Society of Casualty Safety Engineers of Chicago in cooperation with the College of Engineering.

The Conference will open with the judging of the "Safety Gadget Contest." The contest this year will be limited to equipment, displays, visual aids, and gadgets actually made in the plant and used in the plant safety program. Moving pictures commercially produced are not eligible.

This three-day conference will feature six subject sessions: 1. Gathering and Using Safety Data, 2. Off-the-job Accident Prevention Pays Dividends, 3. New Illinois Safety Legislation and Codes, 4. Eliminating Environmental Hazards, 5. The Safety Clinic, 6. Safety Training is Vital.

For a copy of the complete program and details on registration and reservations, please write to: Mr. R. K. Newton, Supervisor of Engineering Extension, 116 Illini Hall, University of Illinois, Champaign, Illinois.

General Hull Elected President of MCA

GENERAL John E. Hull, U.S.A., (Ret.), former United States and UN commander-in-chief in the Far East, has been elected president of the Manufacturing Chemists' Association, Inc., it was announced by John R. Hoover, MCA chairman of the board and president of B. F. Goodrich Chemical Company.

General Hull will begin his new duties immediately with headquarters at the association's offices in Washington, D. C.

After 37 years' service he retired from the army on April 30, 1955 with the rank of full general. At that time he received a fourth Distinguished Service Medal. For the past two months he has served as vice-chairman of the Defense Department Committee to study the problem of American prisoners of war captured in Korea.

Working through technical and advisory committees made up of company experts and the Washington staff, the MCA has been active in developing safe practices for the storing, labeling, shipping and handling of chemicals; in research and education for air and water pollution abatement; in sponsoring other industry-wide research projects; in providing information and assistance to government agencies, and in conducting a general public relations program for the industry.

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non-sparking
ALCO-LITE
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You can't help but get better service from your ALCO-LITE Aluminum Ladders. They can't rust, rot, splinter, spark or burn. They're lighter, easier to lift and handle, yet stronger than any wood ladder you can own. Exclusive ALCO-LITE construction makes them ideal for industrial use. They more than meet the rigid code and tests of the ASA and Metal Ladders Association.
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Corrugated steps are double riveted, front and back, on both sides of the ladder.

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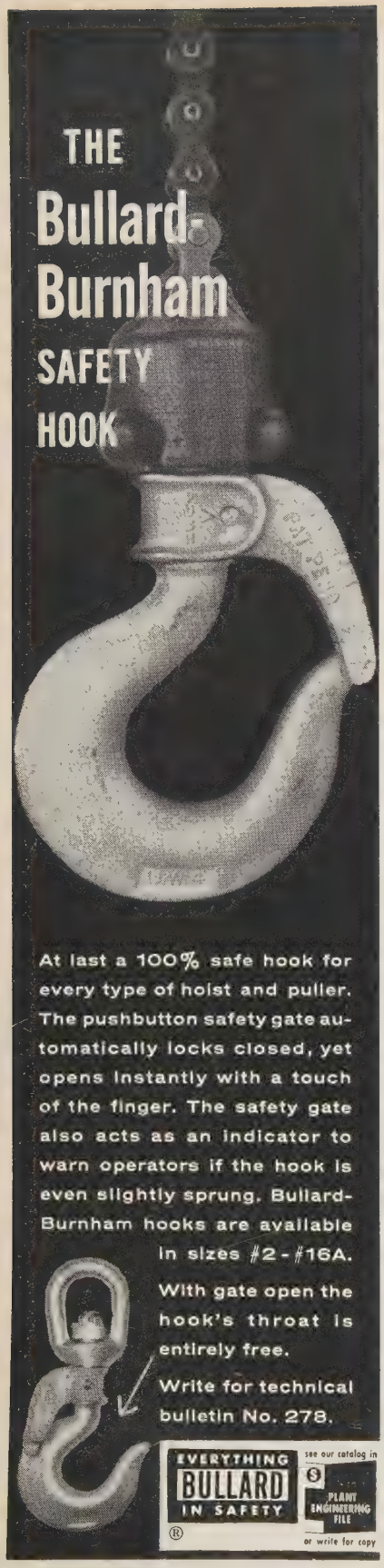
ALUMINUM LADDER COMPANY
Dept. A4
Worthington, Pa.

Please send me further information on type 100, type 400 and other ALCO-LITE Aluminum Ladders.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

(For details, use Key # J-18 on card on page 73)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HOOK
At last a 100% safe hook for every type of hoist and puller. The pushbutton safety gate automatically locks closed, yet opens instantly with a touch of the finger. The safety gate also acts as an indicator to warn operators if the hook is even slightly sprung. Bullard-Burnham hooks are available in sizes #2-#16A.
With gate open the hook's throat is entirely free.
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EVERYTHING BULLARD IN SAFETY
see our catalog in
PLANT ENGINEERING FILE
or write for copy
BULLARD
E. D. BULLARD COMPANY
275 Eighth St., San Francisco
(Use Key # J-19 on Inquiry Card on page 73)

HENRY M. GROSSMAN, Editor
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
. . . . . Newark, N. J.

SAFETY EQUIPMENT—Defective

In a case involving the Federal Employers' Liability Act and the Federal Safety Appliance Act, a railroad brakeman was awarded 65 thousand dollars. The Court ruled that a defective brake was a violation of the Safety Appliance Act. The railroad's failure to furnish the employee a reasonably safe place to work under the conditions at the time of the accident, its failure to adopt a proper safety rule for "flying switch" operations, and its negligence in allowing a gondola car to stand on the transfer track were sufficient proof to make the railroad liable.

WELCH VS. NEW YORK, CHICAGO & ST. LOUIS RAILROAD CO.
Illinois Appellant Court, No. 46,522.
April 20, 1954.

SAFETY EQUIPMENT—Use

The case above was brought under the federal statute which requires an employee to show negligence on the part of the employer. This is unlike the state statutes which require no evidence of negligence on the part of the employer for the injured employee to receive compensation.

The next case illustrates that, even though the employer secures the necessary safety equipment, or takes proper precautions to protect his employees, it is mandatory for him to get his employees to use and take advantage of any safety equipment; since negligence of the employees is no defense against workmen's compensation under the state statutes.

The New Jersey Court recently awarded compensation to an employee who had spilled gasoline on his clothes while filling tanks for his employer. After being told to change his clothes, shown where the dry uniforms were kept, and warned of the danger of gasoline by his employer, he held a lighted match near his clothes to demonstrate that he was not afraid of gasoline. The court held that this action was momentary or impulsive and not an extensive excursion from employment. It was, therefore, within the course of employment that the employee received his burns, and they were ruled compensable. This was true even though the employer had shown the employee the dry uniforms and said "I'd be very happy if you would change your trousers."

SECOR VS. PENN SERVICE GARAGE
35 N. J. Supr. 59 (App. Division, 1955).

SAFETY EQUIPMENT—Lack of

The federal court allowed an employee compensation for an injury he suffered while uncoupling a railroad car, because the car was not equipped with a right-hand grabiron used to support an employee when bending over to uncouple the cars. The Court also held that the Safety Appliance Act was applicable even though the employer contended that the car was out of interstate commerce, since it was being switched to a heavy repair track. The Court reasoned that the Safety Appliance Act was designed to protect yardmen in just such operations as the claimant was performing, and the fact that the car may or may not have been moving interstate traffic, or in use on the carriage line, was immaterial.

BLAZIN VS. SOUTHERN PACIFIC CO.
U. S. District Court, Northern District of California, Southern Division.
Dec. 29, 1954.

SAFETY ACHIEVEMENTS

OLIN MATHIESON CHEMICAL CORPORATION won a safety award in two different categories at the recently-completed annual meeting of the Copper and Brass Research Association.

The company's New Haven, Conn., plant won an award for having the best safety record among brass mills with 500,000 to 1,500,000 man-hours of work time in 1954. Its East Alton, Ill., unit had the best safety record of all brass mills with more than 1,500,000 man-hours.

• • •

FIVE DIFFERENT SAFETY AWARDS were recently presented to the Latrobe, Pa., and New Castle, Pa., plants of American Cyanamid Company by the National Safety Council, the Manufacturing Chemists Association, and the Pennsylvania Department of Labor and Industry. These two plants produce high explosives and electric blasting caps for such industries as coal mining, non-metallic mining, quarrying, road construction, oil and gas.

• • •

TWO GLASS DIVISION UNITS OF THE Pittsburgh Plate Glass Company have been cited by the National Safety Council to receive the "Award of Honor" for their outstanding safety records during 1954, it was announced by T. R. Donoghue, manager of safety and plant protection for the firm. Both plate glassmaking operations, Works Four and Works Six, are located at Ford City, Pennsylvania.

Employees of Works Six were recognized for completing last year without a lost-time accident which enabled them to increase their accident-free man-hours total to 2,256,414. In achieving slightly more than 4,000,000 man-hours on the job, Works Four employees completed the 1954 calendar year with injury frequency and severity rates 81 percent better than the latest PAR figures computed for the plant. The PAR rates are based on one-half of the total average rates of the plant and the flat drawn glass industry for the last three years.

Mr. Donoghue also announced that the firm's metal fabricating plant at Kokomo, Indiana, has been cited by the Council to receive its "Certificate of Commendation" for completing 1954 without a lost-time injury.

• • •

FRUEHAUF TRAILER COMPANY plants in Memphis, Tennessee; Avon Lake, Ohio and Fort Wayne, Indiana captured the major share of honors in the first annual plant safety awards contest sponsored by the Truck Trailer Manufacturers Association.

The Fruehauf Carter plant at Memphis was selected as the nation's safest trailer manufacturing plant in 1954 in the competition which included more than 100 trailer plants coast to coast. In working nearly 1,000,000 man-hours

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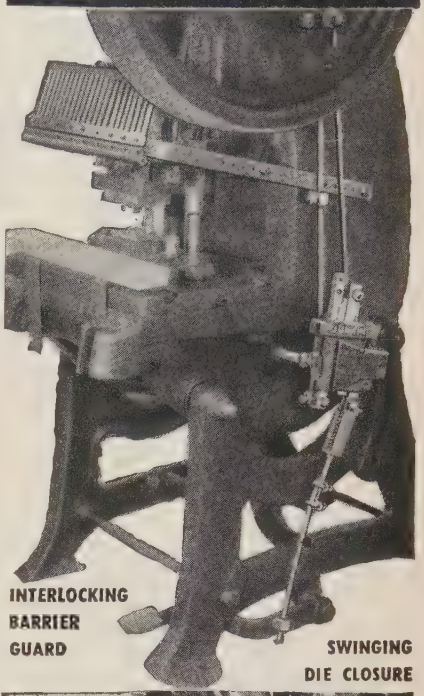

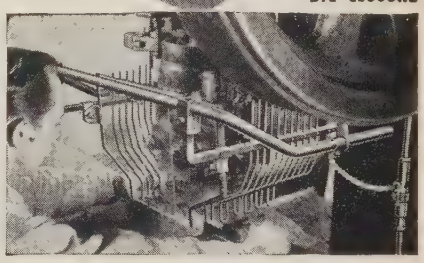

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during the 12 months' period, the Memphis plant recorded only five lost-time accidents.

The Fruehauf Avon Lake and Fort Wayne plants were selected as winners of honorable mention awards in the national contest.

• • •

RECOGNITION FOR OUTSTANDING accident-free safety records accomplished during 1954 has been given to four paint manufacturing units of Pittsburgh Plate Glass Company's Paint Division by the National Safety Council, it was announced by T. R. Donoghue, manager of safety and plant protection for the firm.

Receiving the "Award of Honor" were the Ditzler Color Division at Detroit, Michigan, and the Milwaukee, Wisconsin, plant. Both the Springdale, Pennsylvania, and Portland, Oregon, plants have been cited by the Council for its "Certificate of Commendation."

The Ditzler and Milwaukee units completed the 1954 calendar year with injury frequency and severity rates of 100 percent better than the latest PAR figures computed for the plant. The PAR rates are based on one-half of the total average rates of the plant and the paint and varnish industry for the last three years. Ditzler Color Division increased its accident-free man-hours total to 2,282,932 and the Milwaukee plant completed 1,870,182 accident-free man-hours on May 15, 1955 when its record was broken.

• • •

UNITED STATES RUBBER COMPANY'S Naugatuck, Conn. footwear plant established an all-time safety record in the rubber industry by working 10,250,040 man-hours without a lost-time accident, Wesley M. Graff, supervisor of safety for the company, announced recently.

In April 1955 the 5,500 employes in the footwear plant broke the world's record for safety in the rubber industry by working 7,801,624 man-hours without a lost-time accident. They continued their record by working without a lost-time accident from August 26, 1954 to July 12, 1955.

The new safety record of over 10¼ million man-hours established by Naugatuck footwear plant raised the safety record of the rubber industry from twelfth to eighth place in all industry, Mr. Graff said.

• • •

THE MATERIALS HANDLING EQUIPment manufacturing plant of The Yale & Towne Manufacturing Company has been presented an Award of Merit from the National Safety Council for performance during 1954.

The citation was given for a far lower accident frequency rate and severity rate than normal for kindred industries. The frequency rate of the company during 1954 was 48 percent under similar industry averages and the severity rate 70 percent under average.

• • •

THE AWARD OF HONOR OF THE National Safety Council was awarded to the Wire Rope Division of Jones & Laughlin Steel Corporation.

The award was in recognition of three million man-hours worked without a disabling accident. The record was established in the six and one half year period from January 21, 1949, to May 31, 1955.

• • •

THE RESEARCH AND DEVELOPMENT Department of the Chemstrand Corporation, Decatur, Alabama, recently was awarded a safety plaque by the National Safety Council for its outstanding safety performance during the calendar year 1954. Employees of the Department have worked more than a million man-hours without a lost-time or crippling injury.

Heroism Award

THE NATIONAL trucking industry's highest driver award for heroism, the Pro Meritis Medal, was presented to Floyd J. Pemberton of Detroit, Mich., by the American Trucking Associations.

Pemberton, truck driver for Commercial Carriers, Inc., Detroit, is credited with saving the lives of two women trapped in a flaming automobile. He was driving his truck and semi-trailer at night between Lebanon and Mason, Ohio, on his way back to his home terminal when an oncoming automobile ran into another car about 300 feet in front of the truck. The driver of the oncoming car was thrown out and killed instantly.

The other vehicle was on fire and Pemberton, who had immediately pulled his truck to a stop, put out the fire with an extinguisher he carried in his cab. He placed flares on the highway to warn other motorists and went to the aid of the two women who were in the car. He pulled one of the women from the wreckage and applied a tourniquet to her leg, which had nearly been severed at the knee.

The A-Bomb & Industry

HOW MUCH money should a company spend, and in what ways should it be used, to provide protection against atomic attack?

These and related questions will be discussed Nov. 17 at a conference on "The A-Bomb and Industry—a Prescription for Survival" sponsored by Armour Research Foundation of Illinois Institute of Technology, Chicago.

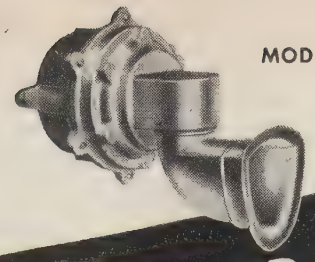
Subjects scheduled for discussion, in addition to the economics of A-bomb and H-bomb protection, include: the danger faced in the event of an atomic attack; protection possibilities, including dispersion of industry, underground construction, and strengthening of existing buildings; industry operation under emergency conditions, continuity of management, and location and preservation of vital records; protection construction in designing new buildings and in strengthening old ones.

The question of "how much money should be spent for how much protection" must be solved if a sound program of plant protection is to be developed, according to conference chairman Raymond W. Sauer, supervisor of the Foundation's structural research group.

"Attempts to provide protection for all of the country's industrial establishments would be far too costly to be undertaken," Sauer explained.

"Some formula must be devised to serve as a guide in establishing priorities for the protection of selected operations within the individual companies, as well as among the industrial areas."

Conference speakers will include authorities representing industry, government, and educational and research institutions.



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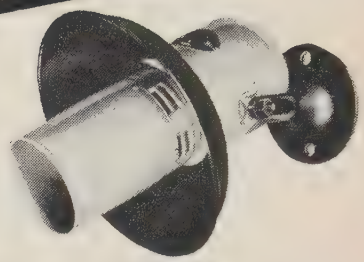

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(For details, use Key # J-21 on card on page 73)

Home Study Course in Industrial Safety

To meet the increasing need of industry for continued safety programs and practices, a new home study course in Industrial Safety Engineering has been added to the curriculum of International Correspondence Schools, Scranton, Pa., according to John C. Villaume, Dean of the Faculty.

With the increased use of automatic machinery and processes, management has become increasingly aware of the safety problem. The new I.C.S. course is an engineering approach to the solution and study of this problem.

Prepared especially for home study, the Industrial Safety Engineering Course is designed to help industrial supervisors in charge of safety, industrial engineers who desire safety training, safety representatives of labor departments, and those whose responsibilities would call for a knowledge of safety practices in industry.

Subjects Covered

Comprised of 41 lessons requiring an estimated average study time of 650 hours, the Industrial Safety Engineering Course provides instruction in mathematics, machine sketching, blueprint reading, industrial psychology, handling of materials, plant and production equipment layout, and safety principles and practices.

The new course has been made available on the I.C.S. Selective Plan which permits employers to select only those instructional units which meet an immediate and specific need.

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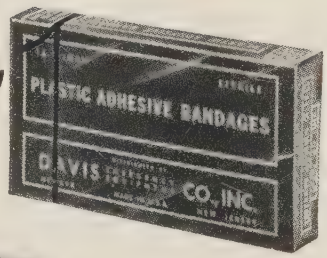

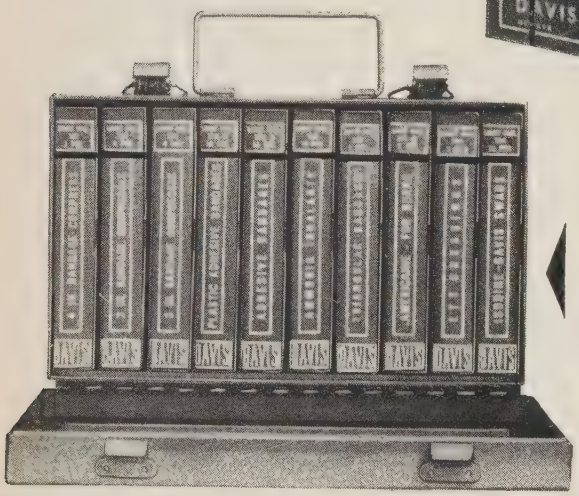

The continuous red line across the face of the D-Carton shows that none of the cartons has been opened.

A break in the red line, as at the third carton in the illustration, signals that they have been opened and should be checked for replacement before the contents have been used up.

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Off-the-Job Accidents Spur Safety Program

The chemical industry is pioneering an off-the-job safety program for its more than 760,000 employees. The new program was started in an effort to reduce off-the-job accidents which, according to the National Safety Council figures for 1954, accounted for seven out of nine accidents in the United States at a cost to the economy of almost $10 billion.

The off-the-job safety program, according to "Chemical News," official publication of the Manufacturing Chemists' Association, will be conducted under the direction of the General Safety Committee of that Association.

The program is being initiated by the compilation of statistics showing the off-the-job safety situation as it apples to chemical industry employees.

Standard for Noise Analyzers

TRACKING DOWN noise and vibrations and reducing them at the source may eliminate hearing loss and dangerous mechanical failure caused by vibrations.

One aid in detecting the din is the just-published "American Standard Method for Specifying the Characteristics of Analyzers Used for the Analysis of Sounds and Vibrations," Z24.15–1955. This standard has been prepared to help the user and manufacturer of analyzers not restricted to octave bands, as a much finer analysis is desirable for detecting some noises and reducing them at the starting point. For example, an octave band would give sufficient analysis of room noise, but to quiet a machine of many gears, an analyzer must be sufficiently selective to separate individual components of the noise.

Different types of analyzers are defined in the document and characteristics are given for each. The standard deals with their frequency ranges, bandwidths, transient responses, input and output voltages and impedances, types of indications, power requirements and extraneous influences. The new standard also describes the operating characteristics that the user should consider and gives the information that the manufacturer should be prepared to supply him.

Since an analyzer is ordinarily used as an accessory to other noise-measuring instruments, special data have been included in the standard to show how to use equipment of different manufacturers together.

The national committee which developed the standard according to procedures of the American Standards Association is sponsored by the Acoustical Society of America. Copies of the new standard can be obtained from the American Standards Association, 70 East 45 Street, New York 17, N. Y. Price is 50 cents a copy.

Nutrition Practices

PUBLIC HEALTH OFFICERS have the responsibility to include nutrition education as a part of a community health program is the recommendation of a new publication of the American Public Health Association.

"Nutrition Practices" describes the role of nutrition in modern public health practice. It is the result of two years of study by a subcommittee of the Association's Committee on Administrative Practice, whose combined efforts have produced an authoritative guide to the administration of public health nutrition programs and for the evaluation of nutrition services.

Copies of the Guide can be obtained from the American Public Health Association, 1790 Broadway, New York 19, N. Y., at $1.00 per single copy, 75 cents per copy in quantities of 25 or more. Cash should accompany orders for single copies.

FIRST AID & HYGIENE SERIES
next article in October

Controlling

by I. MATELSKY
Industrial Hygienist
General Electric Company
Cleveland, Ohio

LET US TAKE an objective look at a worker at his job. His health, well-being, and efficiency are being influenced by the things that are around him—his job environment. Dividing these environmental factors into general categories: chemical, physical, biological and psychological, let's discuss each of them briefly and point out the needs for control.

Chemical Factors

One need only to think of the greatly increased use of organic solvents, refrigerants, diluents, plasticizers, and paints to realize how important it is to know the effect of chemicals upon workers' health. There are several channels through which a chemical can affect us: inhalation, ingestion and skin absorption and sensitivity.

In any plant where materials are being processed, whether there is a change in the physical or chemical state of the material, or just a change in the physical size, some of the material in the form of dust, fumes, vapors, mists or gases will get into the surrounding air and be inhaled by people working there. Some of these contaminants, such as carbon tetrachloride, mercury, lead and silica, can be extremely harmful to an exposed worker. Others, such as coal dust, calcium carbonate and magnesium oxide, are relatively nontoxic, and are usually classified as nuisances. But even a nuisance can indirectly be harmful if the concentration and exposure to it becomes excessive.

Inhalation

The effects of these air-borne contaminants run the gamut of physiological responses. Some act as respiratory irritants, as asphyxiants, as depressors of the nervous system, and as systemic poisons. Others may manifest themselves by producing pathological changes in the lungs such as in silicosis, or the degenerative changes in the vital organs such as in plumbism, or lead poisoning.

Whether or not a material is hazardous to health, and what concentration in air is harmful, is determined by past experience, by experiments on animals and to a limited degree on humans, by analytical laboratory work, and some "educated guesswork." All available data are compiled and evaluated by such impartial agencies as the American Standards Association, U. S. Public Health Service, or American Conference of Governmental Industrial Hygienists. Their published reports constitute the standards which dictate the establishment of control measures. These standards are referred to as "Threshold Limit Values" or "Maximum Allowable Concentrations." They are predicated on a 8-hour day, 40-hour week exposure.

Control measures for these contaminants include the principles of substitution, enclosure, isolation, dilution, general and local exhaust ventilation, protective clothing (face masks, and goggles), and good housekeeping practices.

Ingestion

The problem of ingestion of toxic materials in industry is a minor one. Nevertheless, it is the responsibility of industry to clearly point out the dangers where they exist. Although there are few set values for the toxicity of materials through ingestion it is imperative that all such materials are plainly marked as POISONS and workers instructed to follow the practices established for the safe handling of these materials.

Many materials, especially those that have a corrosive action on the skin and those that are known for their organic solvent properties, can be absorbed through the skin to cause symptoms of systemic damage. Indiscriminate use of degreasing agents defat the skin causing dryness and lesions that are subject to infection.

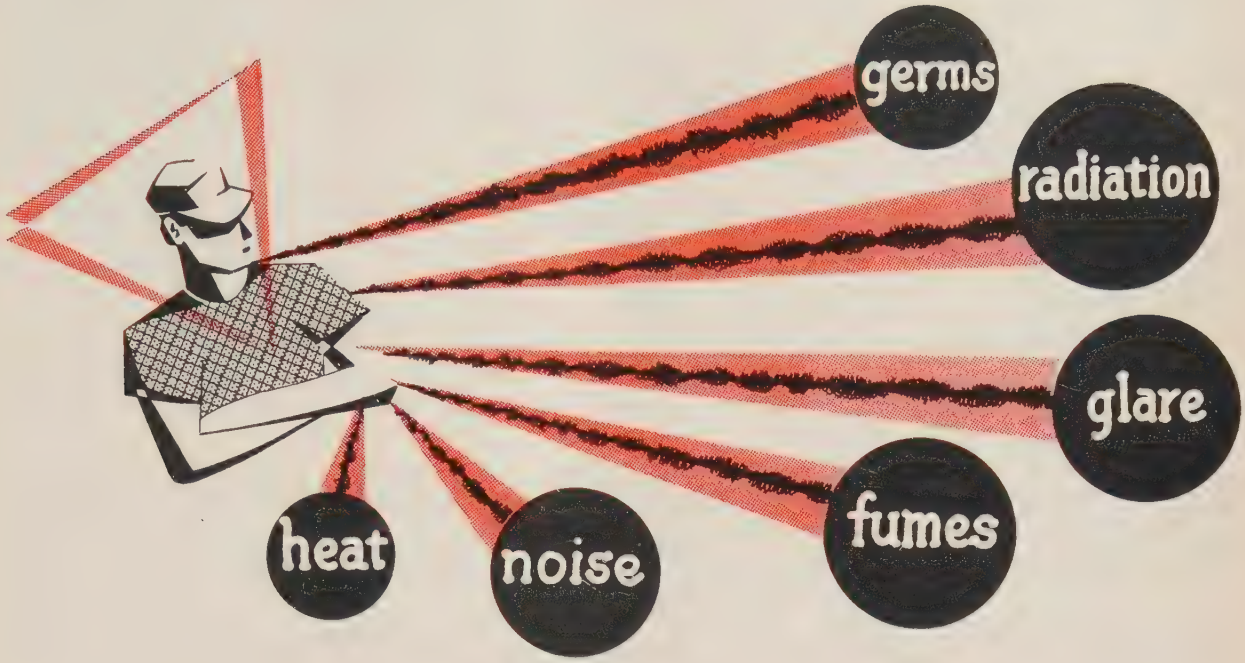
Skin Absorption and Sensitivity

Dermatosis is the most frequently found of the occupational diseases. This is due to the great variety of materials used in industry which have the ability upon repeated contact to act as skin irritants or sensitizers. Petroleum oils and greases are almost universally used in the forms of cutting oils and lubricants, and although they are not usually associated with the more powerful skin irritants, more workers are exposed to their action than to any other class of skin irritant.

Although dermatosis can be caused by agents other than chemicals we are primarily interested in the dermatitis caused by the primary skin irritants and by sensitizers. A primary skin irritant causes dermatitis at the site of contact if the concentration and exposure is great enough. A sensitizer does not necessarily cause a demonstrable skin change upon first contact, but produces alterations in the body or skin that upon subsequent exposure, dermatitis at the site of contact (or elsewhere) will be developed.

Despite the fact that there has been more time lost from work, and more money paid out as compensation for occupational dermatitis than for any other occupa-

the Work Environment



tional disease, much less attention has been paid to the prevention of this malady than to the prevention of industrial poisoning. Nevertheless, there are protective measures that can be taken against the different sources of skin irritants, although not as concrete as for the systemic occupational diseases. These measures should start with the preemployment examination where careful examination of the skin and case history may indicate predisposition to dermatitis. Adequate ventilation at areas of work can reduce the concentrations of dusts and mists in the area and thus reduce chance of contact. The use of protective clothing and protective creams or ointments can be of great value in the prevention of industrial dermatitis.

Physical Environmental Agents

The effects of the physical agents in the working environment on the workers health and well-being are for the most part more subtle than those of the chemical agents. No definite criteria of physiological responses have been established and much of the control measures are dependent upon "trial-and-error" treatment and upon the previously mentioned "educated guesswork." Fatigue and the inability to do work properly can be attributed directly to such factors as noise, faulty illumination, excessive heat, and the impurity of the air. Irreparable damage can be caused by excessive noise and ionizing radiations.

It has long been known that loud and prolonged noise can cause loss of hearing. Further, certain noises of high intensity existent in our factories today can produce changes in the internal ear which, though reversible in the early stages, can lead, on repeated exposures, to permanent injury and partial deafness.

Noise

Although deafness and industrial noise have been associated since the discovery of the steam engine and the need for riveted boilers, little thought had been given to the control of noisy industrial environments until recently.

We still do not know what percentage of the workers have hearing loss due to noise, or do we know the precise safe limits of noise beyond which we can expect hearing damage. However, there are certain criteria which can be established upon which control measures should be based. A continuous pitch level about 85 decibels or a sustained broad spectrum noise level above 95 decibels must be viewed with suspicion.

To safeguard workers in noisy environments periodic audiometric examinations should be instituted. This test, included in preplacement examinations can detect individuals with hearing loss and direct management in the proper placement of that individual. Those showing loss of hearing after short periods of exposure are unduly sensitive to noise and should be removed

immediately from the noisy operation. Measures of control above all else should be directed to the reduction of noise at its source. Employees should be insulated from noise that cannot be reduced to safe limits, and as a first-line defense measure, employees working in a noisy area should be required to wear some form of ear defenders.

Although emphasis placed on control of noise is primarily from the viewpoint of preventing occupational loss of hearing, experiences over the past years have also shown that reduction of noninjurious noise (the nuisance variety) increases efficiency and decreases fatigue in workers.

Illumination and Heat

The one environmental factor common to every industry and necessary to each is illumination. For many years the beneficial effects of good illumination have been known. These are principally greater accuracy in workmanship, increased production, greater ease of seeing, improved morale, more easily maintained sanitation in the plant, and greater safety for the workers. However, good illumination before the beginning of World War II was an expensive commodity not only because of the large numbers of lamps necessary to obtain increased foot-candle levels but also for the increased ventilation necessary to remove the additional heat radiated from these sources. With the development of the fluorescent lamp and other highly efficient sources of light, it became possible for the first time to set up criteria for seeing that were economically practical.

Good illumination does not mean merely the use of enough lamps to give the desired foot-candles at the working surface. Care must be exercised in making sure that the very ill effects management is trying to avoid from poor illumination are not compounded by the injudicious use of these more efficient sources. We must always consider the quality of light, its glare or brightness, its color and distribution as well as the quantity of light.

Recently interest has been shown by some industries in the problem of excessive temperature of the working environment. The processing temperatures found in some industries are sufficiently high as to cause adverse physiological effects if exposures to them are not controlled. These effects can range from discomfort and weakness to heat stroke and heat exhaustion. Exposure to heat influences physical activity and, indirectly, accidents and rates of absenteeism. As temperatures increase, physical work becomes progressively more difficult, with a resultant decrease in production.

The heat regulating mechanism in the body maintains body temperature at 98.6 F. This temperature holds with striking uniformity for all human beings. Any major change of temperature from this point will

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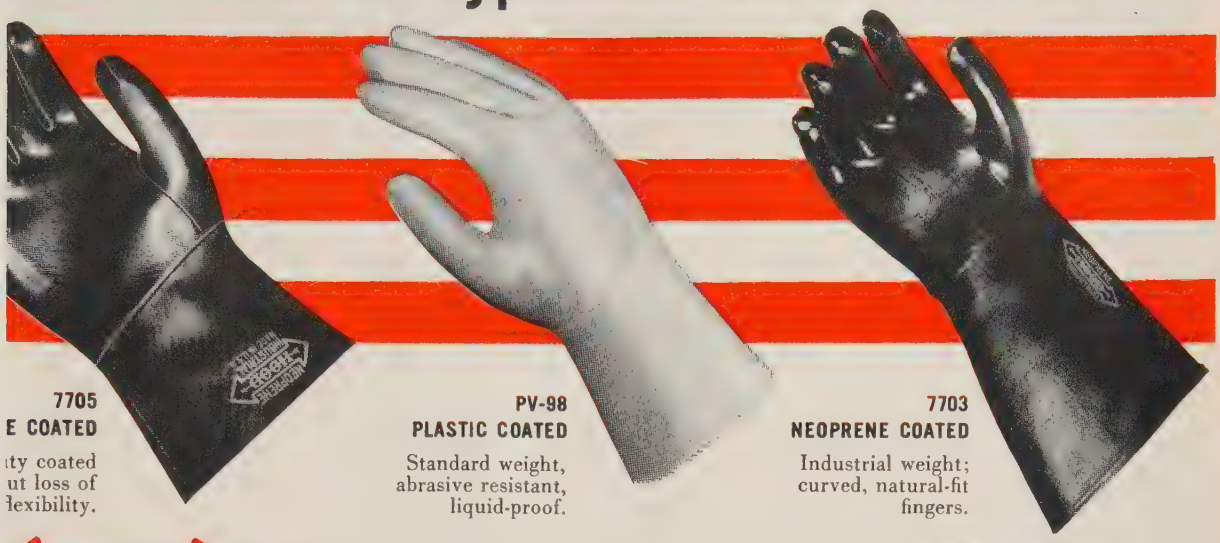

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alter the body's metabolism. In order to his magical 98.6 F, there must be a balance eat production in the body and heat loss body. This balance is influenced by the e of the air surrounding the body, the degree ement, the moisture content of the air, and radiant temperature of surrounding objects. unate that the body does not rely solely upon or the control of this thermal interchange. s involved in acclimatization, such as the od flow, the regulation of blood volume, the n of blood in the system, the regulation of the n mechanism and the automatic reduction ir activity to limit the metabolic rate have a great extent the amount of body damage environments.

, however, much that can be done in industry he heat load placed on the body. The little een done has to a great extent been without lanning and without proper evaluation of the ethods that have been suggested and found combating the ill effects of high temperature are: installation of devices to keep air in a nstant motion at fairly high velocities; vent- t air to the outside, with a corresponding cooler supply air. This ventilation can be eral or local and the velocities depend upon oad; control of the wet bulb temperature in by enclosure, dehumidification, or ventilation, to facilitate the dissipation of heat from the worker; insulation or isolation of hot processes from the worker; reduction of radiant heat from radiating sources by baffles or shields of materials such as aluminum, which have a high degree of reflectivity for infrared, and a low order of emissitivity; in climates where temperatures and humidities are high, adjustment of working hours; around extremely hot processes specially constructed protective clothing has shown great promise.

The practicality of controlling the absorption of infrared from radiating sources should be stressed. In our so-called "hot" industries ambient room temperatures rarely differ extremely from the outside temperatures. Infrared radiation, as energy, has no direct effect in heating the air, but is immediately apparent when absorbed by the body as an increase in body sensation and temperature. Shields, as described above have made it possible for operators to work comfortably only a few feet away from such radiating surfaces.

Nonionizing Radiation

Ultraviolet can be absorbed into human tissue to cause superficial injuries, especially to the skin and eyes. The chief sources of ultraviolet in industry are from open type furnaces, and from electric-arc welding operations. Fortunately the infrared and visible radiations from these sources are so intense as to make some sort of shielding necessary. These protective devices in-

variably are opaque to ultraviolet and have kept injuries from this radiation to a minimum. It is not the furnace operator or welder who is involved in these superficial burns, for he is usually protected. It is the person not involved in the operation, but who is still in the sphere of exposure who invariably suffers. The effects of this radiation are delayed and accumulative. Three to 8 hours may elapse before the injurious effects are felt. Small, intermittent doses over the work day period will give the same result as a momentary but intense exposure.

Control measures obviously consist of protective clothing and masks, shields or enclosures, and limiting of the exposure time. Care must be exercised that enclosures should not be so complete as to cut off adequate ventilation for the fumes from these operations.

Biological Agents

Occupational diseases of biological origin are primarily those causing dermatitis in workers of an allergic nature, and infections by bacteria and fungi. Control of dermatitis caused by sensitivity to plants and plant extracts is basically the same as for the chemical irritants and sensitizers discussed previously. Infections of dermatitis lesions by bacterial or fungal agents may not be considered essentially an occupational disease, but their prevention or arrest depends upon the initial preventive measure taken in the plant.

A subject of greater controversy and speculation is the control of respiratory cross infections among workers. The role of the air in enclosed environments in the spread of respiratory diseases has been established. Proponents of aerial disinfection insist that at least as much attention should be given to the air the worker breathes as to the water he drinks. They point to the low order of respiratory diseases during the summer months when open doors and windows provide from 60–120 physical air changes per hour. During the winter months only 6–8 air changes per hour can be economically provided for heat and comfort by standard air conditioning or ventilating methods. Indoor air sterilization by means of ultraviolet energy or by chemical mists or vapors can provide the equivalent of 60–120 air changes per hour (in respect to bacterial concentrations) and thus reduce the chance of cross infections.

The opponents of this philosophy point out that a worker would only be in a protected atmosphere for one-third of the day and thus be subject to these respiratory infections elsewhere. They question the possibility or the practicality of obtaining a bacterial-free environment, and whether it would be advisable to

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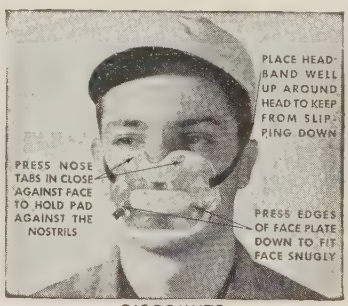
PLACE HEAD-BAND WELL UP AROUND HEAD TO KEEP FROM SLIPPING DOWN
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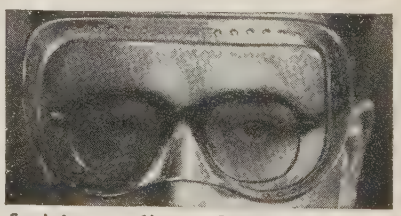

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Ballymore (SAFETY LADDERS)

Safety-Step LADDERS

(For details, use Key # J-29 on card on page 73)

remove these organisms from the air, where subacute exposures to them may build up the body's resistance.

Unfortunately, recommendations regarding bacteriological control of the environment cannot be made at this time from the data presently available to us.

Psychological

Occupational diseases caused by certain environmental factors can be either of a physiological or psychological nature. This is evident from the close association of these two human responses.

Another phase of occupational health long neglected, but now reaching a station of importance is the effect of certain psychological stimuli on the worker which elicit untoward physiological responses. These factors are subtle, but few of us doubt the increase in morale and the decrease in boredom and accidents when industry changed from dirt-hiding dark colors to the more pleasing pastel shades in their plants. Nor can anyone seriously find objection to the use of "canned music" in the plant to cover the monotony of the dull background noises.

One of the most important aspects of the psychological factor, however, is the lack of regard for the human physiological and psychological responses in the design of plants and machines. You can calculate to a nicety the exact stresses and strains that may be developed in a machine without injury to that unit, but it is much more difficult to evaluate the stresses and strains that may be set up in the operator. Machines are designed that need split second timing by workers whose split second response capabilities have not been investigated. When this difficulty is realized, automatic controls are sometimes designed of so complex a nature as to become nothing more than a bewildering mass of dials and switches to the operator.

What is needed in order to control these psychological hazards is a greater interest and activity in the fields of applied physiology and psychology; the further development of the field that is described by Professor Theodore Hatch as "Human Engineering" where man's anatomical, physiological and psychological capabilities as well as his limitations must be considered.

Industrial management has shown interest in other fields not discussed here, such as ventilation and air conditioning for workers' comfort and smoke abatement and waste disposal programs for the benefit of the community. Huge sums of money have been spent for the preservation of good health in workers. This has proven a good investment. With ever changing and new materials and processes being developed industrial hygiene must constantly be ready to keep the worker's environment healthy, and so keep the worker himself healthy.

From an address delivered at the American Society of Mechanical Engineers' 75th Anniversary semi-annual meeting.

The Industrial Nurse ...and Audiometry

Part I

by **ANNE G. BAKKER, R.N.**
Eastman Kodak Company
Rochester, N. Y.

THE increased interest in hearing loss from noise exposure has made nurses members of another team. Her place as a team member is important not only in preplacement and routine follow-up audiograms, but also in assisting with various types of surveys in the science of audiometry.

In the past few years, several factors have contributed to the increased interest in noise induced deafness. Industrial expansion involves new, larger, and heavier types of machines which emit more noise. A decade ago we were only becoming familiar with the term jet and not worrying over how many sound barriers they had broken. There was little or no thought about the hearing loss that might be produced by prolonged exposure to such noise. There has been increasing exposure to hearing loss in industry and, at the same time, more hard of hearing individuals entering the field in order to avoid the competition in fields where hearing acuity is necessary.

Compensation Changes

Along with these changes in the industrial environment, there has been a significant change on the part of state compensation boards. Traditionally, hearing loss resulting from accidents has been recognized as compensable, but recent actions in several states have extended compensability to occupational hearing loss even though there has been no lost time from work and no loss of earnings.

This changing viewpoint is of great economic, social, and psychological significance. If industry is to meet the potentially tremendous cost for occupational hearing loss, it must assume a major responsibility in determining the correlation between noise exposure and hearing loss. In industrial nursing, as in any other field of nursing, the nurse's aim is the maintenance of maximum health, safety and welfare of all persons. She can best serve this purpose, and industry, by persuading employers, employees, doctors and nurses of the need for carrying out surveys and establishing hearing conservation programs.

Periodic Examinations

Since more and more individuals with varying degrees of hearing loss enter industry, an audiogram as part of the preplacement examination helps to prevent placing persons with a hearing loss in situations that might aggravate this condition. Since many people with moderate hearing loss are unaware of the extent of that loss, the correct information helps to establish sound industrial relations. In addition, the record is a protection to the employer against claims for which he is not responsible. Those people with hearing loss and those working in a noisy environment should be retested periodically to detect any change in hearing acuity.

In addition to aiding in proper placement of new employees and serving as a basis of comparison for subsequent examinations on permanent employees, information obtained from surveys may contribute to a better understanding of the hearing status of the general population,—the norms essential in evaluating the effects of occupational noise.

Perhaps one of the greatest responsibilities the nurse has in carrying out a hearing conservation program is to assure the accuracy and reliability of the hearing tests, either by doing them correctly herself or by instructing and supervising others in the proper operation of the audiometer. There are different types and degrees of hearing loss, and occupational noise is only one of many factors influencing hearing. One audiogram is inadequate to establish the degree or permanency of a hearing loss, but repeated audiograms at proper intervals are needed to help the doctor in formulating his opinion as to cause and degree of disability.

(to be continued in October)

"Buddy System" for Cannery Electricians

SOME OF THE electrical problems in food processing plants, stemming from the special nature of the business, were pointed out to the Pacific General Meeting of the American Institute of Electrical Engineers. Use of the "buddy system" was advised for those working on electrical machinery.

The "buddy system," R. S. Wilson, electrical engineer for the California Packing Corp., San Francisco, explained is the habit of working with someone nearby who can be of assistance in case of trouble.

Water, chemicals, steam, and acids create hazardous conditions, damaging electrical machinery, which in turn may become dangerous to employees, Mr. Wilson said. Dangerous practices, such as ignoring safety precautions, defeating safety devices, and improper clearance of power lines, also contribute to hazardous conditions.

Mr. Wilson's paper, "Electricity in the Cannery," discussed the various electrical problems in designing power systems for the canning industry and made the following points of "unusual importance to the designing engineer:

1. "Utmost economy consistent with a fairly high degree of reliability is paramount. This means that components must be reliable but unadorned with non-productive embellishments.
2. "Moisture has to be contended with throughout most of the plant, and the design should be such that either the moisture is kept out or that almost submersible equipment is used.
3. "The effect of various chemicals which are present in the cannery must be kept in mind when choosing various materials and finishes.
4. "Differences of temperature and humidity which may not be very noticeable to the casual visitor can be very detrimental to the equipment by transmission of moisture thru conduit.

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Atomic Energy Guidebook

A COMPREHENSIVE and authoritative review of civilian uses of atomic energy is presented in a new publication, "Atomic Energy Guidebook."

The Guidebook is a non-technical reference source for those already in atomic energy or for those who want to enter the field. It contains answers for those who want to explore the possibilities of atomic energy, or who want to find out how nuclear energy and devices can speed production, improve quality, cut costs and increase profits.

The book is divided into three sections: Section I—*How to Enter The Atomic Energy Business;* Section II—*Basic Information on Status and Future of Atomic Energy;* and Section III—*A Directory in six parts*—Part 1, State by State Directory, classified by these categories: Companies and organizations having operating contracts with Atomic Energy Commission; companies and organizations with laboratory contracts in science with AEC; manufacturers of atomic instruments; schools offering courses in atomic energy; members of study groups; private consultants in atomic energy; official libraries offering information on atomic energy; ore processing plants; holders of AEC access permits; reactors, power and research; reactor builders; Part 2—Members and Key Officials of Atomic Energy Commission; Part 3—Members of Citizens Committees appointed by Atomic Energy Commission; Part 4—Members of statutory Committees Appointed by Congress; Part 5—Alphabetical List of Companies manufacturing atomic instruments; Alphabetical List of Access Permit Holders.

The Guidebook will sell for $7.50 per copy. Publishers are Callahan and Hollowell, 1420 New York Avenue, N. W., Washington 5, D. C.

Maintenance Techniques

ONE OF THE MOST complete and up-to-date guides to problems of maintenance and plant engineering in American industry, "Techniques of Plant Maintenance & Engineering—1955," has been published by Clapp & Poliak, Inc., New York.

The book is a report of the proceedings of the annual conference held concurrently with the Plant Maintenance & Engineering Show. A highlight of the volume is the text of more than 1,000 questions presented by 2,400 executives to the 56 experts, drawn from the nation's leading industrial plants, who led the discussions. The question-and-answer section of the book gives a vivid picture of current maintenance problems being faced by the nation's plants.

Twenty-three prepared papers are included with full text, as well as with questions which followed. Sixteen roundtables, without prepared papers, are summarized.

Although most presentations dealt with problems applicable to all plants, five industries drew special attention. These were chemical, food, paper mill and paper products, steel, and textile.

The book, which is sent without charge to those who attended the conference in Chicago last January, may be obtained for $7.50 postpaid from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y., the firm which produces both the show and conference.

Disaster Control

DEFINITE STEPS for the prevention and, when necessary, control of emergency disaster situations in plants and places of public assembly are presented in three booklets now available from the Association of Casualty and Surety Companies.

One booklet, "Before Disaster Strikes," presents a plan of organization for disaster control and describes the duties of each member of the organization. It gives information on emergency warning and communication systems, training employees, conducting drills, maintaining morale and preparing the plant for emergencies.

The second booklet, "Fire Control," is an extensively revised manual presenting in greater detail accepted procedures for handling fire protection equipment and methods of preventing industrial fires. It is designed to serve as a guide-book for plant management, supervisors and other personnel concerned directly with fire safety.

The third booklet is entitled "Panic and Its Control," and was written by Dr. Walter Cutter of the Center for Safety Education at New York University. The pamphlet covers the nature and causes of panic as well as its prevention and control.

Each of the pamphlets is available at cost, 10¢ a copy, with special price reductions for orders of 100 copies or more. Orders should be addressed to the Association of Casualty and Surety Companies, Accident Prevention Department, 60 John Street, New York 38, New York.

Learning..... the hard way

FRANKENSTEIN!

THIS ACCIDENT is a sort of reverse of most accidents. In this one a guard was the accident maker. It came off a light, landed on an overhead crane and shorted the controls which were unguarded. This caused the hoist to actuate, and could have been very dangerous. Luckily, the crane was not moving and there was no load on it.

The answer is to attach all guards firmly and guard all controls. A guard that doesn't guard is a menace in itself, and unguarded controls on machinery are an open invitation to disaster.

WHAT GOOD IS HISTORY . . . ?

HISTORY IS OFTEN maligned as a study by people who say that it bears no relation to what's going on now. But here's an actual story of accidents which shows its importance to everyday safety.

Late in 1954, a solvent storage tank exploded, killing 10 firemen and causing serious injury to 37 others. Newspaper accounts present the following information:

"Investigators disclosed that both tanks in the yard of the plant were of aluminum alloy, 13 feet in height 8 feet in diameter and with a capacity of 4000 gallons each, and were bought by the plant from a brewery. The tank that exploded was originally used at the plant for storage of cocoanut fatty acid. This was cleaned out by steam when it was decided to use the tank to store a solvent mixture of ortho dichlorobenzene, propylene dichloride and ethylene dichloride used by the textile industry for degreasing. It is believed that the safety vent of the tank was partially clogged. When the solvent was introduced, moisture in the tank and the solvent reacted (hydrolyzed) to form hydrochloric acid. The hydrochloric acid thus formed acted upon the aluminum alloy of the tank to form aluminum tri-chloride with phosgene as a by-product. Heat and pressure built up which could not be relieved by partially clogged vent and a pressure rupture resulted."

It is important, when engineers find tanks storing dangerous chemicals of any kind, that the history of the tank be known including its previous contents, cleaning methods used and its adaptability to its present storage. History is important; it can save lives!

IDEAL FOR CREMATING . . .

A WOMAN WAS inspecting the inside of a rubber airplane fuel cell of 80 cubic feet capacity. She was carrying a gauze pad saturated with methyl ethyl ketone, for removing foreign substances from the inside of the cell, and an extension cord with an unprotected light bulb. There was an explosion and fire inside the cell. It was necessary to cut the cell open to remove the woman. She sustained second and third degree burns over 80 percent of her body.

The woman of course should not have been carrying a flammable liquid and an unprotected light bulb. Whether this was her own carelessness or improper instruction is not clear. In any case, no one should be allowed to enter a confined space to work with a flammable unless all safety precautions have been taken.

WELL NAMED . . .

A PRINTER WAS adjusting a package of paper in a guillotine paper cutter. He accidentally tripped the starting lever and his hand was seized by the hold-down bar. Before he could pull his hand away the blade descended.

This accident could only happen if two precautions were neglected by management. Either the cutter did not have the required two-hand trip or else one side of the trip had been tied back. This man's hand was executed by the guillotine device because he had no reprieve in the form of either proper supervision to prevent tying back the trip or the right kind of guard to prevent him from getting into danger.

LINE OF VISION . . .

A YOUNG HIGH-SCHOOL BOY, working on his summer vacation, was crushed to death by the hoist of a brick-making machine. He had finished cleaning the bucket of the machine, and reached over to turn on the switch which controlled the hoist in order to ride it down. The controls were out of his line of vision, and he pulled the wrong switch. The hoist raised instead of

lowering, crushing his body against the rim of the bucket.

If you're handling anything you have to be able to see what you're doing. Nowhere is that more true than in working around machinery. Of course, guards should be put on all start and stop switches, but even this is not enough. Employees must be trained to be constantly alert even when machines are stopped, and more especially, when they are starting machinery or when it is already in motion.

"THAT PUTS ME IN AN AWKWARD POSITION" . . .

HOW MANY TIMES have we heard that phrase in management discussions? It is always being used when we are afraid of hurting someone's feelings by what someone else has required us to do. It's used by workers too, when they are forced to use equipment that is improperly designed or to do tasks that are more than their muscles can accomplish.

In the instance we are thinking of, an employee was attempting to crank a single cylinder engine. He was holding the exhaust valve with his left hand and cranking the engine with his right, which placed him in an awkward position. He pulled a muscle in his hip and back standing this way. The safety director's report showed that the position was due to improper design of the equipment. It was necessary for the employee to have an open stance and be off balance while cranking this type engine because he had to hold open the exhaust valve with one hand. The exhaust valve was four feet from the crank. Now a suitable starter and a well designed valve release have been installed which allow the employee to use a foot pedal to open the exhaust while cranking the engine.

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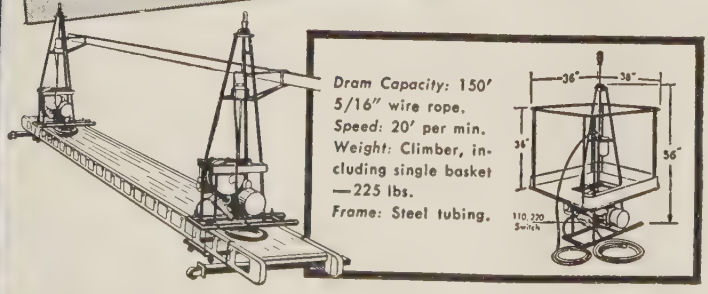

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(For details, use Key # J-32 on card on page 73)

DOCTOR WITHOUT PORTFOLIO

AN EMPLOYEE SUSTAINED slight slag blister burns on his arms. He was injured while using an oxygen-acetylene torch. He did not report the accident and did not receive first aid treatment until three days later. Infection set in and he lost a week's work.

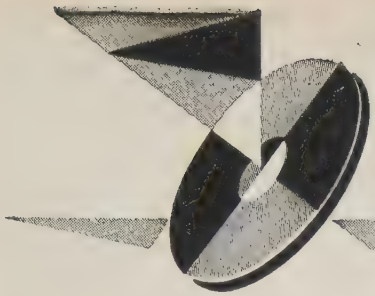
The official cause of the accident was listed as improper clothing, but the safety committee investigating reprimanded the employee severely for not reporting the accident at the time it occurred. All employees had been instructed in the proper protection to wear when welding and in the necessity of getting prompt first aid, as soon as possible.

Apparently, this employee was not only a careless one, but had great faith in his ability to diagnose his own injuries. There doesn't seem to be any sure-fire way to teach people to get medical treatment promptly . . . too many have to learn the hard way.

CONSIDER THE SOURCE . . .

MANY WELDING ACCIDENTS occur when sparks from the torch ignite nearby flammables which should not have been there in the first place. Occasionally, we have an accident in which the welding is successfully completed, the nearby flammables moved back from their safety distances, and the worker leaves with his equipment. Then fire breaks out. Why? Because the material welded is still so hot that it ignites the replaced flammable material.

In the accident we have in mind a workman left a warehouse shortly after using his torch on an oil pipe. Minutes later, the hot pipe ignited the nearby sawdust. Fortunately, two sprinkler heads in the vicinity fused almost immediately, checking the flame and transmitting an alarm. Firemen extinguished the blaze. The moral? Remember, it isn't only the welding torch itself that can cause fire.



transportation safety

Expect the Unexpected

A DRIVER WHO HAS won a house full of prizes for safe driving, has completed 1,500,000 miles of driving without an accident.

Bill Hatten's fellow drivers at Midwest Transfer Company, Chicago, offered him their congratulations on completion of his spectacular safe driving record, as he recently rolled his tractor-trailer unit into the firm's terminal.

Leonard A. Meisner, Safety Director of the transfer company, informally observed that "Bill Hatten has just scored an unbelievable record—20 years and 1,500,000 miles of driving eastern highways without a single chargeable accident. "In fact," said Meisner, "Hatten has had only two accidents of any kind—once when a driver in the wrong lane forced him off the road, and once when his truck axle gave way."

After the informal welcome, Hatten, who started with Midwest 16 years ago, was asked the inevitable question, "How did you do it?" He smiled as he explained that, "I always drive as if everyone else on the road is going to do the unexpected. You just can't let down for a minute when you have a wheel in your hands. But even so," he added, "there have been some close ones."

During the years he has been with Midwest, William Hatten repeatedly has demonstrated his skill behind the wheel—and has earned citations and a host of merchandise, using the company's merit points and merit point bonuses which were awarded him at each step of his safe driving career.

RIDGE ROPE RATCHET

Latest aid to truckers is an aluminum alloy ridge rope ratchet, designed with a view towards safety, economy and ease of operation. Made of an unusually high yield strength, high tensile strength aluminum alloy, the sturdy ratchet is tarnish-proof and corrosion resistant. It eliminates the need for the cumbersome and oftentimes dangerous "flying" iron ridge pole common to open top trailers.

Weighing less than 7 pounds, the new ratchet allows the ridge rope to be tightened or loosened by a simple pumping motion of the ratchet handle, eliminating manipulations of tarpaulin ropes for cargo inspection. Because of its light weight, the ratchet permits increases in payloads. Also, wet-freight claims are avoided since the new ratchet facilitates tarp handling. It can be easily installed on the outside front of the trailer in less than an hour.

For complete details, use Key # TS-18 on inquiry card on page 73.

Drivers' Digest

A NEW MONTHLY publication, *"The Drivers' Digest,"* devoted strictly to the interests of those who drive for a living and their relationship to their employers, has made its debut. It is edited for professional drivers of trucking companies, fleet owners and bus companies.

The pocket-size, 48 page publication will carry no advertising. It is sold on a subscription or a monthly basis directly to the companies employing the drivers and in most cases is mailed directly to the drivers homes.

"The Drivers' Digest" is available on a monthly basis or on a yearly basis with money-back guarantee. The price per copy is nominal, varying with the number of copies ordered. A sample copy and further information can be obtained by writing to the DRIVERS' DIGEST, 8 Depot Square, Englewood, N. J.

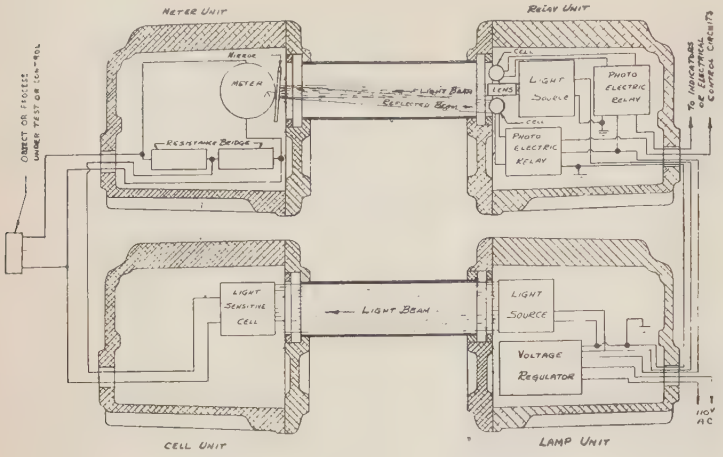
Positions Open as ICC Safety Inspectors

THE UNITED STATES Civil Service Commission has announced an examination for Safety Inspector for filling positions paying $3,670 and $5,440 a year in the Bureau of Motor Carriers, Interstate Commerce Commission, located in various cities throughout the United States.

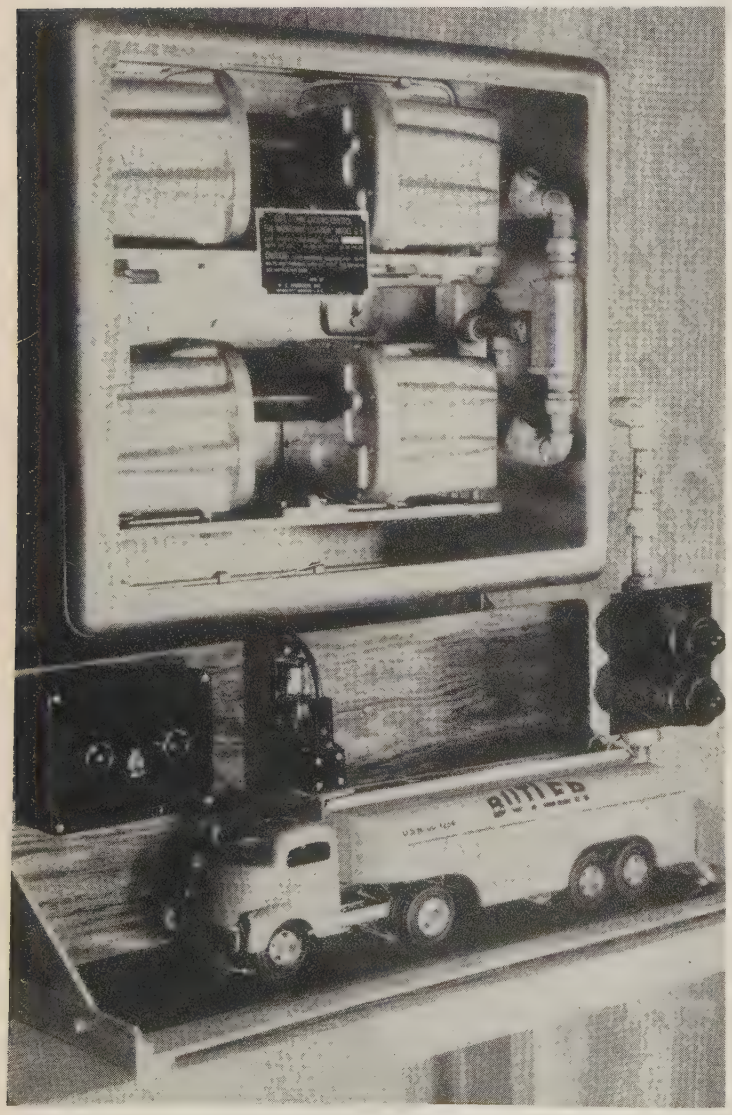
A written test will be given. Appropriate experience or a combination of education and experience is required. For positions paying $3,670 a year, appropriate education alone may be qualifying.

Further information and application forms may be obtained at many post offices throughout the country, or from the U. S. Civil Service Commission, Washington 25, D. C. Applications will be accepted by the Board of U. S. Civil Service Examiners, Interstate Commerce Commission, Washington 25, D. C., until further notice.

Diagram of photo-cell and meter units which constantly check ground control.



GROUND CONTROL for Safe Loading



Model of gasoline truck is grounded with wall-mounted, aluminium, ventilated case containing lamp unit, photo cell unit, meter unit, and electric relay.

NEW ELECTRONIC controls, which reduce exposure to fires—explosions from static electricity and stray electricity on gasoline bulk station loading racks and permit higher safe loading speeds are now in operation in several parts of the country.

Nature of the Problem

Tests have been conducted which reveal that the majority of transports entering a bulk station loading rack carry a substantial static charge. This charge, if not dissipated before the loading procedure begins, represents a serious fire or explosion hazard from either: a static charge on the shell of a transport, which may discharge between the side of the compartment opening and the loading spout igniting the vapors within or coming from the open spout after loading begins; and, during loading, any static discharge from the transport shell to the rack structure or from individuals contacting the transport, which can ignite vapors coming from the dome opening and flowing to the ground.

It is known that a static charge can be generated by the flow of petroleum products into a transport compartment during loading. If this charge is not continuously

Loading platform with four trucks being loaded with gasoline shown in this picture. Truck on the left is grounded with the control unit described in the article.

# of Flammable Liquids

drained off through a grounding arrangement, it can build up to the point where it will discharge across the compartment opening to the loading spout or to some other adjacent circuit to ground. A fire or explosion can easily result from such an electrical discharge. The problem, therefore, is how to provide a dependable ground for dissipating the static charge which may exist on a transport at the time it enters the loading bay or which may develop on it during loading.

In order to prevent the accumulation of hazardous electrical charges before or during the handling of flammable liquids, it has long been customary to require the careful grounding of tanks, trucks and loading equipment. *(See Bulletin #30—Standards of the National Board of Fire Underwriters for the storage, handling and use of flammable liquids as recommended by the National Fire Protection Association.)*

These standards for the bonding and grounding of equipment, when properly carried out, greatly reduce the possibility of fires or explosions in the handling of flammable liquids. However, the present type single wire bonding or grounding cable arrangement is not dependable since there is no way to determine the value of the circuit unless it is tested with an instrument each time the connection is made. Even then the circuit can be interrupted if the ground cable or connections are defective in any way or if the clamping device is disturbed while loading is in progress. The fact that a mere mechanical connection exists between transport and ground is not proof of an adequate bonding circuit. To believe otherwise is false security.

The Solution

In order to have a grounding system that gives positive assurance that no build-up of static or stray electric charges can occur, it is necessary to: provide for continuously proving the effectiveness of the grounding circuits from the moment of ground cable attachment until loading is completed; provide that any failure of the circuit after ground cable attachment be indicated through warning devices, electrical interlocks, or a combination of both. An interlocking system that automatically blocks loading operations in the event of improper grounding is an important safety control device for handling flammable liquids; and, provide control equipment that satisfies the requirements of Underwriters Laboratories for class 1, group C and D locations.

Bulk station loading racks can now be equipped with a completely automatic interlocking system that prevents any fuel loading operation from being commenced or continued if resistance of the ground connections is in excess of the allowable maximum.*

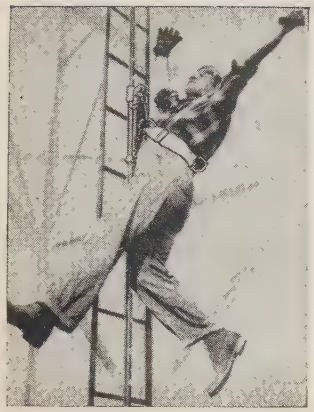
This interlocking control device removes from the operator's control the ability to load fuel transports unless ground connections are adequate. Equipment uses explosion proof enclosures and fittings (Class 1—Group C & D). Through a special use of light refraction there is no direct connection between the power circuit and the test circuit nor between the test circuit and the relay operating the interlocking system. This is an important feature of this safety control equipment since it makes it impossible for the truck to become electrically charged through any failure of the power source.

The Results

No loading operations can take place unless all ground and bond connections are properly made. Tests of equipment during loading operations show no remaining accu-

* The name and address of the manufacturer may be obtained on inquiry to the editor.

YOU CAN'T FALL
It's a Life Saver



IT LOCKS—IT HOLDS

SAFETY DEVICE FOR LADDERS

Prevents death and injuries from falling.

Inexpensive: Easy to install. Clamps on ladder rung or structures with peg steps or framework etc. No welding or cutting.

Automatic: Positive. Will catch workman if he starts to fall even if unconscious.

Simple to operate. No upkeep. Requires no attention from climber.

Notched rail **hot dipped galvanized.** Entire equipment rust and corrosion proof.

In use throughout country and abroad for approximately 6 years.

Patented. Manufactured only by

SAFETY TOWER LADDER CO.
1024 Burbank Blvd. P O Box 1052
BURBANK: CALIFORNIA

(Use Key # J-33 on Inquiry Card on page 73)

mulation of static or stray electric charges. Exposure of bulk loading station to fire or explosion from this cause is reduced to a minimum. No time is lost from actual loading operations in order to manually check the adequacy of ground connections. Faster loading speed is made possible by the positive assurance that necessary safeguards to reduce exposure to fire or explosion are operating properly. Morale of operators is improved because of reduced personal exposure to injury from fire or explosion. One unit installed at a delivery terminal of a products pipe line company early in 1954, has already had 13 units added to it.

Additional Applications

The device provides safe automatic process control on almost any type of hazardous loading or transfer operations. Besides its application on bulk gasoline loading stations, this equipment, with certain modifications, is also being used with outstanding success for multiple testing of the electrical continuities of rockets, to make sure that the rockets will detonate when they are supposed to. The new device may be used to provide automatic control over the loading or transfer of jet fuels or high octane gasoline from loading trucks into airplanes, gasoline service stations, fuel dumps, tanker or tank car and other similar applications. It may also be used to provide automatic process controls to safeguard hazardous operations in petrochemical plants, refineries, chemical plants, munitions plants, rubber and plastic-coating operations, photographic film processing, operations where the presence of explosive dust presents a hazard, and in most other industrial operations where static or stray electrical currents represent a fire or explosion hazard.

Pictures by courtesy of The Hewson Co.

(Use Key # J-34 on Inquiry Card on page 73)

How Do YOU Look At An Accident?

These problems test your ability to judge accident responsibility based on modern defensive driving techniques. They have been devised by Donald S. Buck, safety director, U. S. Army Transportation Corps. Assume that each report is based on a true accident; that each driver's statement is true and complete as given. Decide in each case whether the driver caused the accident or was victim. Remember that you are not deciding who is at fault, but determining who helped to cause the accident.

? ? ?

Case No. 7—Driver's Statement

"While driving at 30 mph, over a rough pavement section, where the highway is under repair, I suddenly came into a big chuckhole. I could not turn out because of a car coming, so I hit the brakes and slid into the hole, which was about 6 inches deep. I broke a spring and blew out both front tires. I did everything possible to avoid it, but this is another case where a *poor* roadway caused an accident."

Case No. 8—Driver's Statement

"This other vehicle, which I was following, stopped for a red traffic light on a steep hill, I pulled up 4 or 5 feet behind him, but in starting up he rolled back and mashed in my radiator grill, even before I had a chance to blow my horn. I was standing dead still. I couldn't roll back because of another car close behind me."

Answers on page 78

inside the trade

CLEMENT SAFETY EQUIPMENT, INC., in Memphis, Tennessee, is a new source of supply for industrial safety products in the South Central States. With *Charles B. Clement* as president, the new firm became officially operative on August 1st and will serve western Tennessee, Kentucky, Arkansas, Mississippi, northwest Alabama, and northern Louisiana. It is carrying safety items from 70-odd manufacturers. The new concern, with offices at 720 S. 3rd St., Memphis, is an outgrowth of the former safety division of *J. E. DILWORTH COMPANY*, Memphis heavy machinery and mill supply house.

WALTER KIDDE & CO., INC. has announced a re-alignment of management organization and responsibility. The program creates five divisions, each one of which will operate under a Vice President who will be General Manager of the division and responsible for product designs, manufacturing and sales.

The divisions, vice presidents and products will be: Aviation Division, (V. S. Hill, Jr.,), aircraft fire detection and extinguishing systems, airborne air compressors and other pneumatic equipment, life raft and flotation equipment, gun chargers and other associated aircraft accessories; Industrial and Marine Division, (P. W. Eberhardt), fire detection and extinguishing systems and portables for land and sea use, and ultrasonic burglar alarms; Engineering and Research Division, (D. Mapes), active in many fields, ranging from small hand extinguishers to auxiliary power units for the Military; Textile Machinery Division, (D. Mapes), tension controls and yarn treating machinery; and the International Division, (Arthur M. Doxsey), products destined for overseas consumption and management of Kidde subsidiaries in Canada, England, Mexico, Germany and Brazil.

THE YALE & TOWNE MFG. CO. has added a new Sales and Service Branch for its industrial trucks at 4466 Woodward Ave., Detroit, to serve lower Michigan and Toledo, Ohio, areas. *Mr. D. K. Wirth* is manager of the new outlet and *John R. Henderson* is sales manager. The company's Detroit hoist regional sales office has also been moved to the new building from 3026 E. Grand Blvd. and will continue to have *Neal J. Kemp* as hoist representative. The Industrial truck service facilities will be in the charge of *Joseph Hanasack* and mobile service units will be available for "on the spot" service at customers' plants in addition to the Branch servicing.

The company has also announced the appointment of two additional lift truck sales and service representatives: Kimball Industrial Sales Corp., 730 W. Indiana Ave., South Bend, Ind.; and the H. W. Carpenter Co., 4916 N. Sheridan, Peoria, Ill.

This year, for the first time, a manufacturer who is producing exclusively safety products, was the recipient of the National Industrial Advertisers' Association annual award.

THE E. D. BULLARD COMPANY of San Francisco, which is headed by *E. W. Bullard*, was recently honored with the Topper award for its "effectiveness of advertising performance," and the award is recognition of the importance of safety equipment advertising.

The firm's advertising manager, *George Andrews*, believes that in theming advertising it is of the utmost importance to stay as close to the man in the field as possible. He feels that the safety engineer should be fully aware of any limitations in the equipment he is using.

In advertising the latest Bullard hats, illustrations show the hats being subjected to tests, and detailed information on the results are provided for the benefit of the safety engineer.

The San Francisco advertising and publicity firm of *Wank, Lougee, McDonald and Lee* has been handling the E. D. Bullard advertising program since 1927, and *Dave McDonald* is now acting as account executive.

AMERICAN WHEELABRATOR & EQUIPMENT CORP., Mishawaka, Indiana announces that it has changed its corporate name to Wheelabrator Corporation, effective immediately. The move does not involve any alteration in the ownership, management, or operation of the company.

TALLER & COOPER, INC., of Brooklyn, is undertaking a major expansion of its Special Products Division, according to an announcement by *Benjamin Cooper*, president. Although a specialist in toll collection equipment, the company's many other products include: air pollution detectors and toxic gas controls; digital converters and computers; dynamic testing; automatic counting and printing systems; monitoring and telemetering systems for automatic control of industrial processes; card and tape punching and sensing equipment; and other closed loop systems.

Now, all these and other activities are to be consolidated within a single division of the company, separate from the toll equipment department.

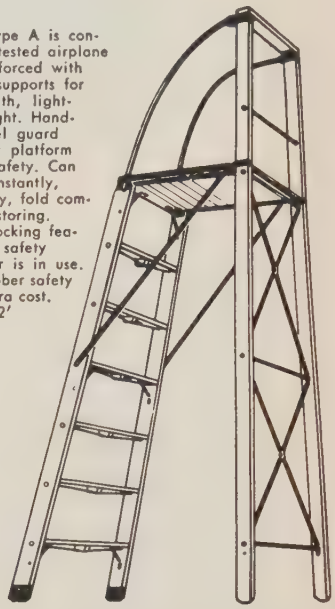
The new Special Products section will

Dayton safety ladders

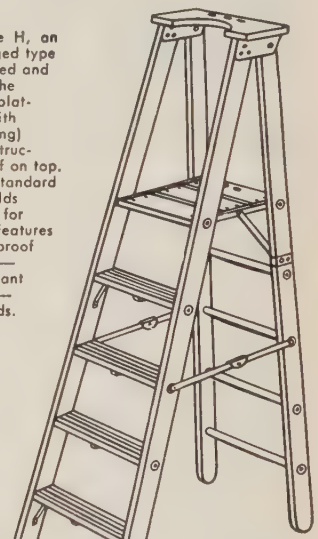
APPROVED AND LABELED BY UNDERWRITERS LABORATORIES

Daytons are built of selected, tested, kiln-dried Sitka Spruce, Douglas Fir, or West Coast Hemlock. Designed in accordance with the latest specifications of the American Standards Association Safety Code.

DAYTON Type A is constructed of tested airplane spruce, reinforced with rigid steel supports for great strength, lightness of weight. Handrails of steel guard large roomy platform for added safety. Can be set up instantly, easy to carry, fold compactly for storing. Automatic locking feature insures safety while ladder is in use. Standard rubber safety shoes no extra cost. Sizes 3′ to 12′ to platform.



DAYTON Type H, an extremely rugged type ladder, designed and built to meet the demand for a platform ladder with mill wright (rung) type back construction. Tool shelf on top. Ladder shoes standard equipment. Folds absolutely flat for easy storage. Features include pinch-proof type spreaders—corrosion resistant zinc hardware—slip proof treads. Sizes 4′ to 16′ to platform.



For FREE literature write Dept. G

Dayton safety ladder co.

2339 Gilbert Ave., Cincinnati, Ohio

In Canada—SAFETY SUPPLY CO., TORONTO

(Use Key # J-35 on Inquiry Card on page 73)

"Fire-Chief Finished"

WELDING CURTAINS—SALVAGE COVERS

to confine the welding operation to a given area

used to protect machinery, and other equipment from water, dust and snow.

MADE OF CANVAS

impregnated with Hooper's Fire Chief treatment under their patent which carries the Underwriters' Laboratory seal.

A. Smith & Son Inc.

Established Eighteen Hundred Sixty-Seven

MANUFACTURERS OF REEVES STRETCHER

Ridge Ave. at Green Philadelphia 23

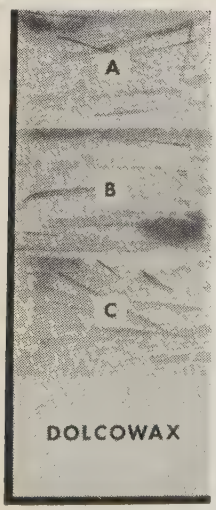
"If It's Made of Canvas, We Make It"

(For details, use Key # J-36 on card on page 73)

"TRAFFIC PANEL" TEST PROVES

DOLCOWAX

BEST FOR LONG-LASTING FLOOR BEAUTY!



THE TEST—four sections of flooring, each panel prepared with a different floor wax. All panels subjected to heavy traffic. . . .

THE RESULTS—The DOLCOWAX panel retained markedly finer lustre—its beauty actually increased with wear—and it retained scuff and scratch resistance to a greater degree.

DOLCOWAX *premium quality* floor wax is most economical in the long run. Ideal for "second coating"—the second coat integrates with the first . . . no "crawling" or "puddling" to prevent an even, uniform film.

IMPORTANT: The slip-resistance feature built into DOLCOWAX permits a soft, lovely finish with safety protection! Has Underwriters Laboratories approval, of course.

When preparing floors for waxing, use CINDET, the Dolge all-purpose cleaner, for more complete stripping of old wax film.

Write for literature; consult your DOLGE Service Man on your floor finishing problems.

FOR FREE SANITARY SURVEY OF YOUR PREMISES SEE YOUR DOLGE SERVICE MAN

dependable DOLGE

WESTPORT, CONNECTICUT

(For details, use Key # J-37 on card on page 73)

be manned by its own research staff in electrical, mechanical and chemical engineering, and will have its own advertising, sales and other administrative personnel. Special representatives throughout the country will handle sales of the various products to appropriate industries. First appointments of such sales representatives will be announced shortly, Mr. Cooper said.

ROBINSON AVIATION, INC., vibration and shock control engineers, Teterboro, New Jersey, announces the appointment of the following new manufacturer's representative to provide engineering service for Robinson's Airborne and Industrial Divisions: Emory Design and Equipment Co., 404 Dexter Ave., Birmingham, Alabama. This organization will represent Robinson in the states of Alabama, Florida, Georgia and Tennessee.

ALAN WOOD STEEL COMPANY has announced three promotions in executive personnel. *Perry L. Francis*, formerly Vice President in Charge of Sales, was elected Vice President in Charge of Marketing. *William E. Boger*, formerly General Superintendent, was elected Vice President in Charge of Operations. *Howard W. Read*, formerly Comptroller and Assistant Treasurer, was elected Vice President and Comptroller.

The company has also announced the appointment of *Charles D. Dorworth* as Director of Personnel. Mr. Dorworth joined the company in 1917 as Safety Engineer, which post he held until 1931 when he was named Manager of Safety and Welfare. In his new position, Mr. Dorworth will be in charge of employment, plant security, accident prevention and community relations at the company's plants at Conshohocken and Ivy Rock, Pa. and at its ore mines at Oxford and Dover in Northern New Jersey.

T. R. FINN & COMPANY INC., of Hawthorne, N. J., specialists in shock and vibration control, announce the appointment of *Edwin L. Keil* as Sales Engineer in the New York City area. In addition, two new sales agents were also appointed: Allen, Mitchell & Co. of Washington, D. C. will cover Maryland, the District of Columbia and Virginia counties adjacent to the Capitol area, and George F. Bertrand Company of Philadelphia, Pa. will represent the Finn Company in Delaware, Southern New Jersey and Eastern Pennsylvania.

THE COLSON CORPORATION, Elyria, Ohio, manufacturers of wheeled products and material handling equipment, has named *Fred Adams* as assistant sales manager and promoted *E. L. Messmer* to branch manager of the New York City branch office.

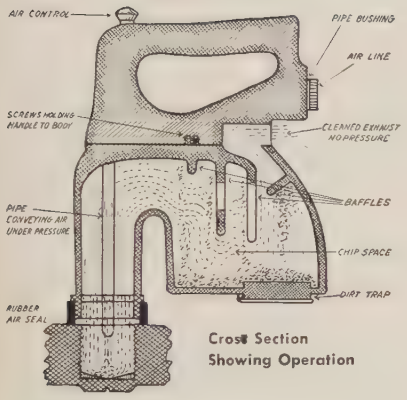
Adams formerly was assistant to the sales manager of Colson's industrial division. Messmer formerly was a Colson sales representative assigned to the New York City branch.

Material appearing in this section is published as information for our readers and is not intended to imply endorsement or guarantee by SAFETY MAINTENANCE.

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE



Cross Section Showing Operation

CHIP COLLECTING AIR GUN

(Use Key # 600 on Inquiry Card on page 73)

THE PNEUMATIC chip gun made by Buffalo Machinery Co., Inc. eliminates the danger of flying chips when blowing out the cuttings from blind drilled or tapped holes. When the chip gun is placed over the blind hole, the air stream carries the chips up to the collecting chamber. In the chamber the air expands, loses velocity, strikes baffles and deposits the chips in the chamber while the cleaned air is released at slight pressure. The gun operates on a regular air line. It is made in two sizes: Model A for holes ¼ to ⅝ inches in diameter; and Model B for ½ to 1½ inch holes.

ASPHALT COLOR FINISH

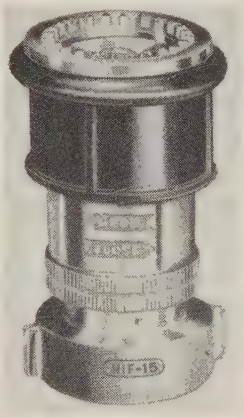
(Use Key # 601 on Inquiry Card on page 73)

FLINTKOTE SYNTEX Colored Toppings are heavy bodied, plasticized mastic concentrates having a rubber (latex) base. They are intended to be diluted with approximately an equal volume of water prior to application. Mineral type fillers impart toughness for resistance to wear under foot traffic.

These red or green coatings bond securely to asphalt surfacing and provide complete hiding of the base black color. Low temperature flexibility and high strength binding properties of the latex provide resistance to weather and water, crazing and cracking.

The colored toppings, being of neutral color latex base, permit good retention of the red or green color without weakening the binder. Moreover, the color does not track or dust off. The coating is applied in a film thickness many times the thickness of paint, and this thickness plus the abrasion resistant fillers provide long wear and durability under light traffic.

Coverage will vary with the porosity and texture of the base. Generally, two coats of the topping are sufficient with a coverage of about 200 to 250 sq. ft. per gallon of the water-diluted topping.



INDUSTRIAL FOG NOZZLE

(Use Key # 602 on Inquiry Card on page 73)

A VERSATILE low-cost fog nozzle for industrial plants is announced by the Fyr-Fyter Company. The flow of water through this new fog nozzle can be quickly changed from straight stream, to fog, to shut-off. The nozzle was designed to cut down on the heavy water damage which often results through the use of conventional straight stream nozzles. It also provides an unusually wide fog range, from zero to 150 degrees.

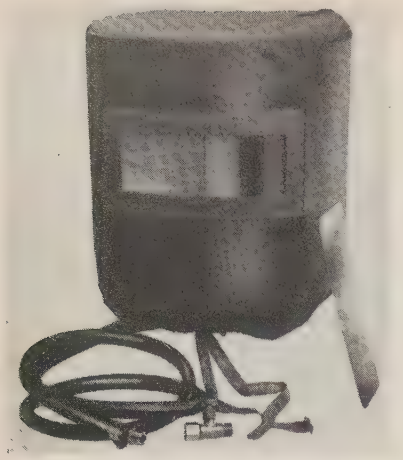
Base of the nozzle has rocker lugs for easy and tight attachment to hose lines. It is furnished with a satin brass finish.

ABSORBENTS DISPENSER

(Use Key # 603 on Inquiry Card on page 73)

OIL-DRI absorbents can now be instantly available in every department of a plant with a new dispenser developed by the Oil-Dri Corp. of America. The new dispenser, made entirely of steel, holds 150 pounds of absorbents, yet occupies only 2¼ square feet of floor space. Design is rugged and simple with no parts to adjust. Economical operation is based on a slot-type release which automatically feeds absorbents to the floor of the dispenser where it is scooped up. The unit is equipped with side bracket for scoop or shovel. Since the dispenser is self-contained, each floor spreading operation of absorbents takes only a few moments. A screen mounted on top of the dispenser enables Oil-Dri absorbents to be re-used. Sweepings are poured back through this screen which filters steel chips, scraps, paper and other foreign materials. The absorbents drop back into the dispenser. This new dispenser answers the need for an "on-the-spot" absorbents container.

In addition to reducing slipping hazards by absorbing oils, greases, fats and acids, Oil-Dri resists burning at temperatures up to 3,000 degrees. This makes the product particularly effective in reducing fire hazards where machinery is used.



AIR-SUPPLIED SAFETY HOODS

(Use Key # 604 on Inquiry Card on page 73)

A LINE of light-weight hoods with air supplied by airline for respiratory and complete head protection of personnel in toxic or oxygen-deficient atmospheres is offered by Wagco Products, Inc. Particularly suitable for operations involving paint spray, vapors or dusts, the hoods feature durability, resiliency and comfort.

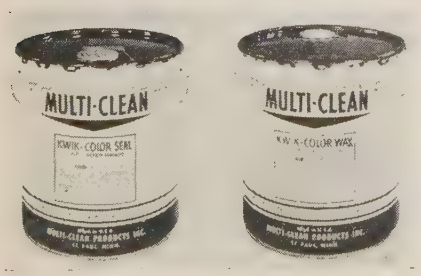
The model shown here is of maroon, single-coated rubber cloth, with drawstring closure at the neck. An inside head band is adjustable to any head size. It has interchangeable open or closed clear acetate windows. The hood is also available in twill or vinyl plastic.

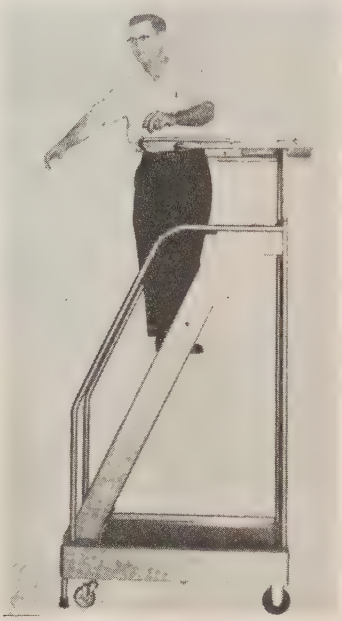
CONCRETE COLOR FINISHES

(Use Key # 605 on Inquiry Card on page 73)

A NEW WAY to add permanent non-fading color to concrete floors, and eliminate concrete "dusting" is announced by Multi-Clean Products, Inc. The company's Kwik-Color Seal and Kwik-Color Wax are designed to be used in conjunction with each other on either old or new concrete. After the floor has been cleaned and etched with a concrete hardener and etcher, Kwik-Color Seal is applied. Formulated from an emulsified plastic resin, the sealer is said to eliminate dusting, make cleaning easier, and beautify the floor. It is odorless, non-flammable and easy to apply. Dries hard to the touch in 20 minutes.

The color sealer develops excellent water resistance in about 14 to 20 days after application. To protect against water during this short "curing" interval, Kwik-Color Wax should be applied. This is a high-grade waterproof emulsion wax containing colored emulsified plastic resin. It gives a high gloss finish over the seal and further protects and beautifies the floor. Also fast drying, it is said that busy floors are back in service within two hours after etching, sealing and waxing. Both products are available in tile red and light gray permanent, non-fading colors. The seal covers approximately 800 sq. ft. per gal., and the wax about 1000 sq. ft. per gal.





LADDER GUARD RAIL

(Use Key # 606 on Inquiry Card on page 73)

A NEW SAFETY-BAR now makes the Safe-Lad mobile ladder-truck safer than ever according to the manufacturer. Use of the accessory provides guard rail protection on all four sides for work in the 9 to 14 foot maintenance zone. Attached to the original 3-side guard rail, the safety bar remains at waist level, adjustable for snugness as operator ascends. The bar swings to the rear and locks when not needed.

The Saf-Lad Mfg. Co. reports operators are more secure, particularly when standing on the highest Safe-Lad step (6') or on the auxiliary platform (7'), and feel free to use both hands for work.

ANTI-RUST CHEMICALS

(Use Key # 607 on Inquiry Card on page 73)

THE PENETONE CO. has developed a new chemical, called Antiox, which combats all forms of rust and corrosion. Metals such as iron, aluminum, zinc and magnesium which are subject to rust or corrosion, can now be protected inexpensively. This new and modern chemical is not greasy and is clean to use. It deposits a dry, invisible, thin protective film on all metals. The product comes in four different forms:

Antiox Type-C, unaffected by hot or cold climates, damp or corrosive atmospheres, is equally effective for indoor or outdoor applications. It protects all metals against corrosion for at least one year. Suitable for manufacturers of machinery, equipment, piping, structural sections, farm equipment, metal parts, etc.

Antiox Type-D provides approximately 6 months protection against corrosion during indoor storage. It is recommended for use by manufacturers of tools, sheet metal and bars, wires, automotive parts, pipe fittings, precision parts, and for use in diesel and internal combustion engines as well as engine fuel systems.

Antiox Type-R, a specially treated safety solvent which replaces poisonous carbon tetrachloride and other extremely hazardous chlorinated solvents, is used for cleaning, degreasing and protecting metals and electrical equipment. It provides two months indoor protection against corrosion.

Antiox Type-S cleans and protects all metals (except lead) against corrosion for two months in indoor storage. It is used chiefly as a rinse for finished and unfinished parts, during processing and between operations, or as a final rinse. Also useable as a rust preventative in closed water circulating systems such as cooling systems, heat exchangers and leak testing equipment, and for light duty dip tank degreasing. One dip cleans and inhibits the metal against corrosion.

SAFETY PIPE HOOK

(Use Key # 608 on Inquiry Card on page 73)

DESIGNED with handle for safety, the Newman Mfg. & Sales Company's new pipe hook eliminates the hazard of crushed hands and speeds moving of pipe. Can be used manually when placing pipe in position for welding or connecting. Cluster of two to four hooks may be used on a spreader for loading or unloading pipe. Made of manganese steel, it has 2½" throat opening, 1¼" eye. Can be used with ⅜" or ½" Newco Combination Clamp and Thimble or regular shackle.

NEW PRODUCTS

CONTINUED ON PAGE 75

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

MATERIALS HANDLING

Sectional Scaffolding 368
Bil-Jax, Inc. Well-illustrated 16-page booklet shows tubular steel sectional scaffolding for a wide variety of construction and maintenance work. Also information on allied equipment: casters and base plates, putlogs, shoring, side brackets, rolling towers, metal catwalks, hoist towers, metal stages, winches, etc.

Freight Lift 369
Robot Appliances, Inc. This bulletin describes a freight-dumbwaiter-lift which is a compact self-contained unit for moving materials or personnel. Data includes information on safety features.

Locking Safety Hook 370
Newman Mfg. & Sales Co. Illustrated bulletin, which describes & gives size specifications for a positive-locking safety hook. When load is lifted, gate automatically locks in place and hook cannot be opened until manually pressed against compression spring.

LPG Gas Trucks 371
Towmotor Corp. This 4-page, well-illustrated brochure outlines the cost cutting advantages of fork lift trucks fueled with liquefied petroleum gas. Schematic diagrams and photos show how system is installed and works.

Roller Conveyor Catalog 372
E. W. Buschman Co. A new 20-page catalog offers full details on the Series 60 medium and heavy duty roller conveyers. Includes capacities of rollers and bearings, charts and cutaways views of bearings and model capacities, and a wide variety of specialized equipment for various industries and problems.

PERSONAL PROTECTION

All-Plastic Goggle 373
American Optical Co. Four models of all-plastic industrial goggles are illustrated and described in this bulletin. Special emphasis on two lightweight models with interchangeable lenses and temples, one with integral side shields. Also shown are two medium duty models.

Supplied Air Masks 374
Scott Aviation Corp. "Save Money, Man Hours & Men" is the title of this well illustrated 12-page booklet which cites case histories in the use of self-contained and airline supplied-air respiratory devices.

Protective Clothing 375
Plasco Safety Products Co. Concise, 4-page catalog lists several different models of aprons, coats, coveralls, shirts, pants, sleeves, hand pads, wrist guards, leggings, spats, goggles, etc. Clothing is made of plastic, rubber, neoprene, denim, duck, leather, etc.

FIRE PROTECTION

Fire Pre-Detector System 376
Pyrene—C-O-Two. This reprint of an article describes a new method of fire detection, utilizing radioactive elements and sensitive to the first products of combustion before flame or smoke become visible. A new development for quicker detection of fires.

Safety Shutoff Valves 377
Combustion Control Div., Electronics Corp. of America. This 4-page bulletin describes and illustrates a manual reset safety shutoff valve for use with Fireye flame-failure safeguard control systems to stop automatically the flow of fuel in the event of flame failure. Bulletin includes specifications, capacities and data on installation, operation, maintenance and guarantee.

Safety Cans 378
J. D. Polis Mfg. Co. Two bulletins describe, illustrate, give uses and show specifications for safety cans, rinsing cans, storage & towel bins and filling cans for storing and handling flammable liquids or materials.

Airfoam Fire Extinguishing Equipment 379
American LaFrance Corp. Unusually informative 36-page booklet gives detailed information on all types of Foamite Airfoam equipment, including fixed systems, portable and semi-portable equipment.

FIRST AID & HYGIENE

Blower-Operated Resuscitator ... 380
Globe Industries, Inc. This 4-page bulletin describes a resuscitator unit that can be used with an electrically operated blower when oxygen under pressure is not available. Unit can also be used as an inhalator and aspirator.

Burn Kits 381
Mine Safety Appliances Co. A first aid kit for the immediate treatment of all types of burns is described in this bulletin. Kit contains four Foille aerosol sprays, dressings and accessories.

Skin Protection 382
The Chemical Corp. Illustrated brochure describes and suggests uses for several types of industrial skin protection products, including waterless cleaner; light, medium and heavy duty protective creams; and work lotions.

MAINTENANCE

Washroom Deodorizing 383
C. B. Dolge Co. Descriptive folder shows how and where to use aromatic vaporizing

(Continued on next page)

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READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

ADVERTISED PRODUCTS: Just insert the key number shown under each advertisement in the boxes below.

NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item

FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

September, 1955

Please send me the following free data (Remember to fill in your name and address.

PLEASE PRINT

Name _____ Title _____

Company Name _____

Street Address _____

MAIL POSTAGE PAID CARD FOR MORE DATA

Free Bulletins (Cont'd)

cakes for control of odors in toilets, urinals, lockers, garbage, storage rooms, etc.

Asphalt & Rubber Tile Floor Problems 384
National Sanitary Supply Association has published a bulletin chart showing several problems that may be encountered with asphalt or rubber tile floors and explaining what the remedy is. The bulletins are available from members of the Association and that organization will send you name of your nearest member company.

Maintenance Materials Chart ... 385
Monroe Co., Inc. A bulletin suitable for wall mounting or file reference lists alphabetically many common maintenance problems and suggests solutions, such as acid resistant coatings, anti-rust paints, dampproofing, floor & roof repairs, etc.

Rug Dry-Cleaning Machine 386
American Floor Surfacing Machine Co. Bulletin shows how to dry-clean rugs using a floor machine with a new whirling brush attachment. Other attachments shown for a variety of floor maintenance problems.

LADDERS

Aluminum Step Ladder 387
Aluminum Ladder Co. Folder gives details on a folding aluminum step ladder with steps on both sides. Illustrations point up strong construction and non-slip surfaces of steps.

Self-Leveling Ladders 388
Richbuilt Mfg. Co. Well illustrated bulletin shows wooden industrial and mechanics step ladders with a self-leveling hinge that prevents ladder strain and sway on unlevel surfaces.

MISCELLANEOUS

Automatic Exit Lights 389
Electric Cord Co. Battery-powered emergency exit lights and safety signs that are plugged into light circuit and automatically shift to battery operation in the event of power failures are described in this bulletin. Several wordings for these signs are illustrated.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protection Clothing
109	Safety Belts
110	Safety Gloves
111	Foot Protection
112	Anti-Slip Soles
113	Oil-Proof Soles
114	Welding Helmets
115	Welding Curtains
	FIRST AID AND PERSONAL HYGIENE
120	Protective Skin Cream
121	Skin Cleansers
122	Sanitary Drinking Cups
123	Athlete's Foot Control
124	Salt Tablets
125	Noise Analysis & Control
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Resuscitators
	DUST & FUME CONTROL
135	Portable Ventilator
136	Dust & Fume Collectors
137	Carbon Monoxide Control

Key Number	Subject
	FIRE PROTECTION
140	Fire Extinguishers
141	Safety Cans
142	Extinguishing Ashtray
143	Safer Solvents
144	Degreasing Machines
145	Combustion Safeguards
146	Flammable Liquid Pumps
147	Fire Retardants
	LIGHTING & ELECTRICAL EQUIPMENT
150	Alarms & Warning Lights
151	Explosion-Proof Lights
152	Electrical Insulation Tester
153	Fluorescent Lamp Guards
	FLOOR & BUILDING MAINTENANCE
160	Anti-Slip Floors & Mats
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Cleaning Machines
164	Oil & Grease Absorbents
165	Paints
	LADDERS & SCAFFOLDS
170	Ladders & Safety Devices
171	Scaffolds
172	Work Platforms
	GUARDS
175	Machine Guards
176	Power Press Feeders
	EDUCATIONAL AIDS
180	Safety Signs
181	Aisle Marking Equipment
182	Safety Awards & Emblems
183	Employee Safety Guide

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No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 6634, SEC. 34.9 P. L. & R., NEW YORK, N. Y.

"SAFETY MAINTENANCE & PRODUCTION"
ALFRED M. BEST COMPANY, INC.
75 FULTON STREET
NEW YORK 38, N. Y.

READER'S FREE INQUIRY CARD

for further data on

ADVERTISED PRODUCTS,

NEW PRODUCTS,

FREE BULLETINS & CATALOGS

WHAT'S YOUR PROBLEM?

(Continued from page 72)

PLASTIC COATED WIRE ROPE

(Use Key # 609 on Inquiry Card on page 73)

AN ALL new plastic coated cable, "Plastic Galvanized" or "Plastic Stainless," is announced by Macwhyte Company. It is currently available in sizes 1/16" x 1/8" to 1/4" x 3/8", inclusive, in transparent green, or opaque white. Strengths are from 480 lbs. to 7000 lbs. Size description of the cable includes the diameter of the cable before coating and the diameter after coating. For example, a 3/32" x 3/16" cable is a wire rope 3/32" in diameter before coating with plastic and 3/16" diameter when finished.

This new cable is either a PREformed Galvanized Steel or Stainless Steel Wire Rope, coated with strong, tough, flexible plastic. The thickness of the plastic coating varies with the diameter of the rope. The flexibility of the rope is not adversely affected by the plastic coating. It resists sunlight, oxidation, and provides excellent color stability. It is resistant to most acids, bases, salts, oils and greases, except hydrofluoric acid and methyl ethyl ketone.

PLASTIC DIPPED GLOVES

(Use Key # 610 on Inquiry Card on page 73)

DAVID'S GLOVES, INC. has brought out a new line of heavy duty plastic-coated gloves. Called the "Jed Black," the gloves are made of fleece-lined canvas, dipped in a "sealing" solution and then dipped in a black plastic solution. They are available fully coated or just palm coated, with regular thumb, reversible thumb, open cuff, knit wrist, or any length gauntlet. Company names or safety or other slogans will be imprinted on the cuffs at no extra charge. The plastic coating is tough and long wearing, protecting the hands from abrasion, cuts, and hazardous liquids.

PORTABLE GAS DETECTOR

(Use Key # 611 on Inquiry Card on page 73)

A LIGHTER, simpler, more compact instrument for detecting combustible gases and vapors is provided in the new J-W SNIFFER Model G. This latest portable indicator includes many improvements, two of particular importance to the routine user: (1) To increase battery life, the on-off switch has been integrated with the

aspirator bulb in such a way that grasping the bulb to draw in a sample automatically turns the indicator on. When the bulb is released, the instrument is shut off. (2) To speed sampling and to minimize operator fatigue, a new type flame-arresting system permits the use of an extremely soft aspirator bulb because of reduced resistance to air flow.

Made by Johnson Williams, Inc. the new Model G is designed to be worn waist-high suspended by a carrying strap around the neck. Other features include a rugged, corrosion-resistant Fiberglas case; improved circuit which maintains maximum filament sensitivity, even in the presence of leaded vapors; hermetically-sealed indicating meter which is unaffected by moisture, dust, or magnetic fields; an easily replaceable combination flame arrestor and filament assembly; and a design which uses ordinary flashlight cell batteries, replaceable without the use of tools. Weight is slightly over 4 lbs.

URINAL SCREEN-TRAP

(Use Key # 612 on Inquiry Card on page 73)

MADE OF an aluminum perforated core molded with a broad rubber edging, Sani-Screen is tailored to fit any urinal. Rubber edging insures a water-tight seal around all edges. The screen flushes clean after each use, eliminating odors. It comes in 5 sizes to fit all urinals.

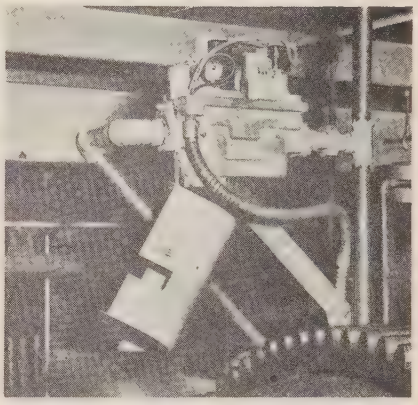
Made by the Bundy Co., the screen keeps urinals unplugged and clean. A special removal tool lifts the screen out for easy disposal of cigarettes and waste material thrown in the urinal.

DUST MOP DRESSING

(Use Key # 613 on Inquiry Card on page 73)

A NEW mop treatment which eliminates dust and grit from all surfaces without leaving residue has been introduced by U. S. Sanitary Specialties Corp. The dust treating compound, called Dustnox, is a hydrosolar liquid dressing which is oil-free and non-flammable. A mop or cloth treated with Dustnox will last about one week with normal use, and then can be laundered and given a fresh treatment.

The new product contains great masses of colloidal particles which attract dust on contact and hold it. The manufacturer states that waxed floors will have a prolonged life when maintained with the new product.

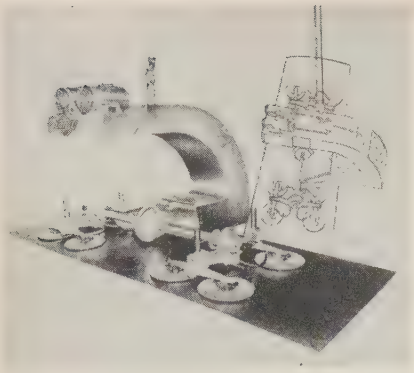


SAFETY PRESS VALVE

(Use Key # 614 on Inquiry Card on page 73)

INCREASED safety for operators of large metal stamping presses is provided by a new protector air valve made by The Clark Controller Company. The company also revealed a revolutionary new anti-repeat control for presses incorporating transistors instead of moving parts. The new controls are intended for use on all presses which have clutches or brakes, or a combination of the two, operated by air pressure.

For safety reasons, presses are automatically stopped at the end of each stroke by an electrically-operated valve, which exhausts air pressure to release the clutch and set the brake. Another stroke cannot begin unless each man working on the press has both of his hands depressing pushbuttons. Clark Controller's new development adds a safety unit to the operating air valve. This is a second valve, also capable of releasing the air pressure from the press clutch and of setting the brake. This valve stands by in normal operation, but operates instantly to stop the press if the operating valve fails to function properly.



ROLL-OVER SHEET LIFTER

(Use Key # 615 on Inquiry Card on page 73)

A NEW 8-Cup Vacuum Roll-Over Sheet Lifter is announced by F. J. Littell Machine Co. This lifter has a lifting capacity of approximately 14,000 lbs. It can easily and safely handle sheets of any non-porous material up to 5 feet wide by 20 feet long weighing 2000 lbs. with a 7 to 1 safety factor. The lifter is equipped with a U-hook for attaching to an overhead crane. Lifting of the sheets is accomplished by vacuum produced by two pumps. The vacuum is conveyed by tubes through a storage tank to the 8 rubber cups. No scratches can ever be made on the sheets as only rubber comes in contact with the surface.

There is no longer any need for pinch bars to separate sheets or for grappling hooks for lifting the load. Sheet Lifter separates and handles the sheets without damage.

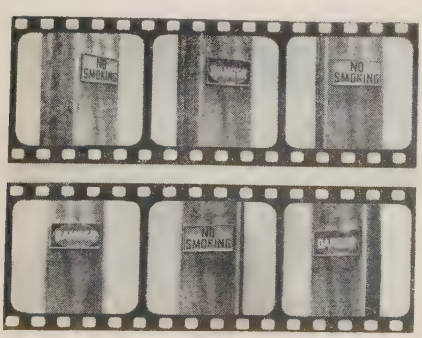
The unique feature of the Roll-Over Sheet Lifter is its ability to rotate the sheet 180°. Sheet or plate when inverted can be carried with complete safety and without dependence upon vacuum. Rotation may be stopped at any angle from horizontal to 180°, making inspection of both sides of sheet easy. It also provides an excellent means of vertical stacking of sheets. The operation of the lifter and the handling of the material can now be accomplished by only one man.

Larger units can be supplied to lift sheets or plates weighing up to 4000 pounds.

DOUBLE-IMAGE SIGNS

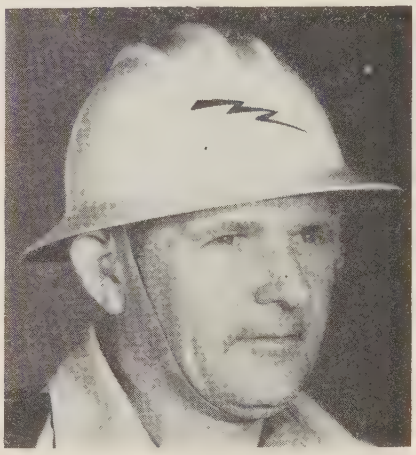
(Use Key # 616 on Inquiry Card on page 73)

A NEW type of industrial safety sign has been announced by the Irwin-Hodson Company. Called Vari-Vue Safety Signs, they are animated, so that as employees approach, pass, or leave the sign, the safety messages on the signs change automatically from one to the other, as shown in the picture. This apparent motion attracts the attention of the viewer.



No mechanical or electrical devices are needed to complete the animation, and no special lighting is needed for the signs. The animation is accomplished through minute linear lenses which separate the multiple images laminated behind the lenses. A steel frame covers the back and edges of the signs.

Three styles are now ready for shipment, and the company states that more are to come. At the present time, the style shown in the picture, "DANGER—NO SMOKING," "SAFETY FIRST—IT PAYS," and "CAUTION—BE CAREFUL" are in production.



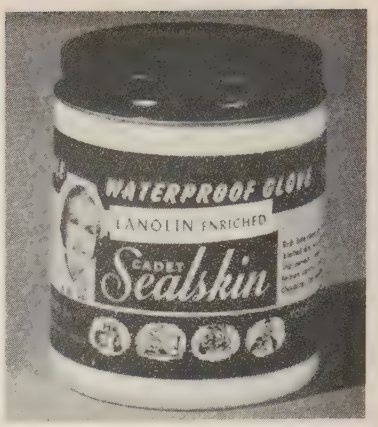
LINEMAN'S PLASTIC HAT

(Use Key # 617 on Inquiry Card on page 73)

INSULATING Head Gear that provides light-weight head protection for electrical workers has been developed by E. D. Bullard Company. The new Bullard KV offers protection against both impact from falling or flying objects and electric shock and burn, as outlined by the Edison Electric Institute specifications of April 1, 1954.

Manufactured from a Bullard developed plastic, Estherene, the hat has no metal in the shell, suspension or chin strap, nor are there holes in the shell. The plastic is a tough, non-aging, self-extinguishing material. The insulating hard hat weighs less than 14 ounces and has a three-ribbed crown for extra strength. Available in White or Yellow, these permanent molded-in colors will not fade. Each hat is externally marked by the lightning symbol on the front to designate its suitability for electrical workers.

Plastic wedges stitched around the sweatband fit into molded hangers inside the hat shell. Sweatbands are made of leather or non-toxic vinyl. The crown straps are so assembled as to distribute the impact of a blow equally to all areas of the head.



IMPROVED SKIN CREAM

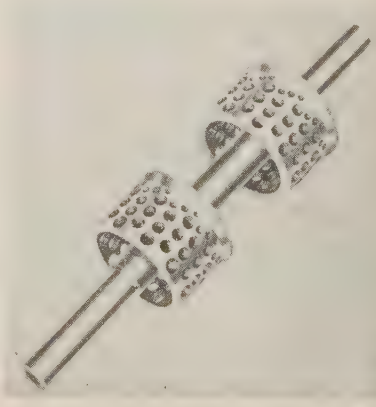
(Use Key # 618 on Inquiry Card on page 73)

CADET LABORATORIES, manufacturers of "Sealskin" protective skin cream, have announced that the product is now fortified with silicones for more effective protection. The product is also enriched with lanolin. Used by doctors, nurses, food workers, industrial employees, laundry and dairy workers, etc., one application on the dry skin, set under cold water, and blotted dry affords several hours of waterproof protection against harsh chemicals, dyes, acids, alkalis and water. The makers state that the cream restores chapped skin, prevents dermatitis and can be safely used on irritated skin.

ANTI-VIBRATION PLUGS

(Use Key # 619 on Inquiry Card on page 73)

HAMMEL-DAHL Diaphragm Control Valves with "Flash-Flo Plugs" eliminate the destructive vibration, trim deterioration, and high noise level which often occur in valves on flashing liquid service. With ordinary valves, a negligible amount of energy is converted to heat as a result of the friction of the liquid upon itself and on the surfaces of the valve. Most of the potential energy becomes kinetic and it is imparted to the down stream piping in the form of severe vibration. In the Flash-Flo Plug design, threaded holes are geometrically spaced around the plug skirt to create turbulence and distribute energy release over a large surface area. More



potential energy is converted directly to heat by means of the internal turbulence of the liquid, with the result that less kinetic energy is available for damage to the piping. The rise in temperature of the metals is almost unnoticeable, since a very small amount of heat takes the place of a large amount of mechanical energy.

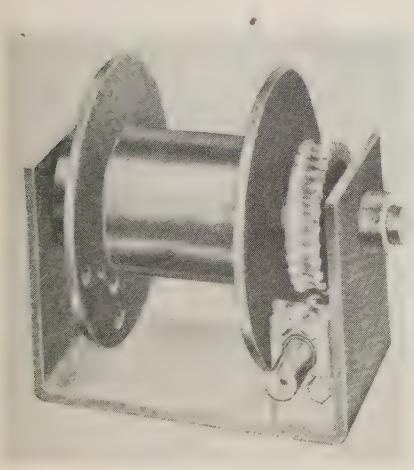
Hammel-Dahl Control Valves with Flash-Flo Plugs are offered in nominal sizes from 3 to 16 inches, with either single or double seated construction. Plug material and flow characteristics are as per customer specifications.

FIRE EXTINGUISHER TUBING

(Use Key # 620 on Inquiry Card on page 73)

FIRE EXTINGUISHER service companies, manufacturers of fire extinguishers and large industrial plants with large numbers of first aid fire extinguishers of the water, soda-acid and foam types will be interested in the new fire extinguisher tubing announced by the Thermoid Company.

The new hose is manufactured to meet Underwriters' Laboratory Specifications of 400 psi for five minutes. It is available in black or red, 3/8" ID, 11/16" OD, with one braid of reinforcement. For convenience in stocking, the hose is packaged in lengths cut to specifications at the factory such as the often-used 14½", 15½" and 24" lengths. The hose weighs 14 lb. per 100 feet.

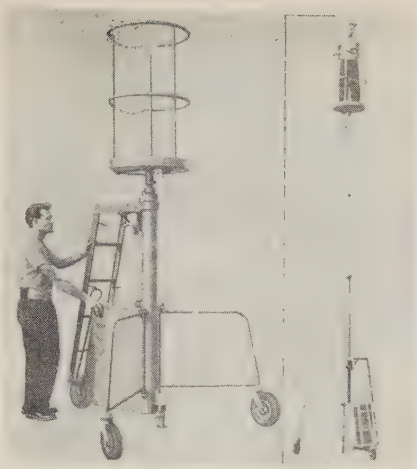


SELF-LOCKING WINCH

(Use Key # 621 on Inquiry Card on page 73)

A NEW worm gear winch incorporating a self-locking feature has been announced by Little Giant Products, Inc. According to the manufacturer, the self-locking feature insures safety in operation—there are no pawls or dogs to break, and there is no slippage when cranking.

Designed for applications where loads of up to 2000 lbs. are pulled, lifted or carried in suspension, the new winch is adapted to either hand or power operation. It is compact and sturdy, and built with an ample safety factor. The drum has a capacity of 150 ft. of 1/8" cable or 80 ft. of 1/4" cable. Gear ratio is 29 to 1.

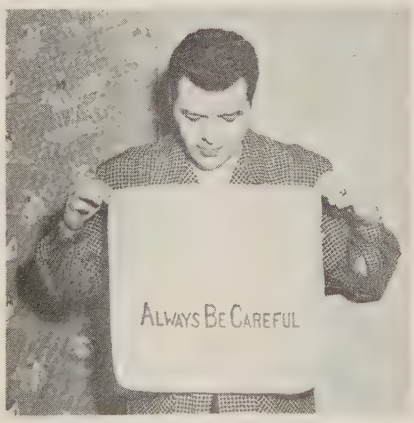


MAINTENANCE LIFT

(Use Key # 622 on Inquiry Card on page 73)

A NEW, multi-purpose, compact, mobile hydraulic lift known as the "Bulb Snatcher" (because it reaches high ceilings for light bulb maintenance) is now available from the G. W. Galloway Company. It lifts both men and materials up to 400 lbs. in weight to a height of 20 feet above floor level This unit can be raised and lowered from its rail-guarded 24" diameter platform or from the floor. A 35' Neoprene covered 3-conductor cable conveys the power for the 110 volt electrical system. The full height is reached within 45 seconds for painting, plastering, repairing, changing light bulbs, etc.

It consists of a rigid frame supported by three 12" wheels. Foot brakes are supplied with the unit to prevent any movement when it is in use. In its down position, the unit is a compact 30" wide and 6' 5" high so that it stores or manuevers easily in restricted areas.



SAFETY SLOGAN TOWELS

(Use Key # 623 on Inquiry Card on page 73)

PROMOTING SAFETY at the workman level is the contribution of Industrial Wiping Cloth Co., Inc., in the form of safety slogans imprinted on their Texel Shop Towels. Workmen are constantly reminded of their responsibility to themselves and their coworkers in practicing safety every time they use their shop towel.

The Texel towels are distributed through Texel Service Industrial Launderers who rent them to plants throughout the country. The towels are specifically designed and manufactured for shop use. They have smoothly bound edges that cannot fray to catch in machinery. They are of even weave and uniform size with unusual high absorbency.

LEAK-INDICATING VALVE COVERS

(Use Key # 624 on Inquiry Card on page 73)

NEIRAD INDUSTRIES, INC. has taken over the business of the Milsheff Corporation, and is manufacturing and marketing the Milsheff "Spray-Stop" value and flange covers for chemical-carrying pipelines.

Neirad's new valve and flange covers incorporate a unique color-changing agent that gives vividly apparent warning when struck by leaking chemicals, but it is unaffected by fumes. The color-change is immediately apparent to anyone in the vicinity, thus putting every member of works personnel on the "inspection crew."

Another safety feature is that it prevents sudden pipeline leaks from spraying harmful liquids onto nearby workers and equipment, by deflecting the chemical to the ground.

ORLON WORK CLOTHES

(Use Key # 625 on Inquiry Card on page 73)

AUGMENTING AN already extensive line of Orlon work clothes, Worklon, Inc. announces the introduction of additional apparel items made of the Du Pont "modern-living" fiber. These include Orlon underwear ("T" shirts and shorts), fitted work gloves, and complete matched sets of uniforms consisting of caps, jackets, trousers, and shirts. All these garments give the wearer the advantages of comfort, neat appearance, and resistance to corrosive chemicals.

The Orlon fabrics used for the industrial apparel are especially designed to resist damage by abrasion, by heat, cold and sunlight, by greases, paints, moisture, by acids and acid fumes. No dry cleaning, no special care is needed. The garments wash easily, dry quickly, require little or no pressing.

YOUR FREE INQUIRY CARD—Page 73

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Answers to "How Do You Look at an Accident" on page 68

Now that you have passed judgment on these accidents, let's review the answer to see how well you made out. Don't be disturbed if you didn't get a perfect score. Very few safety men have! Each case should have been scored as a "preventable" accident.

7. Caused by our driver. A person driving, seeking to drive at an appropriate rate of speed with regard to the condition of the pavement, will reduce his speed in rough sections in anticipation of this predicament. But the big mistake by our driver was hitting his brakes as he slid into the hole. Striking a bump of that nature with wheels locked is almost a guarantee of broken springs and tires. Recognizing his predicament, he should have decelerated up to the chuckhole, then released his brakes and allowed the wheels to roll through, minimizing the shock of hitting the bump.

8. Caused by our driver. Had our driver allowed an interval of 15 or 20 feet, instead of the four or five, he would have left space for the driver ahead to regain control of his vehicle. This would have also insured time to blow his horn, warning the other driver that he was rolling back. But by pulling up needlessly close to the other vehicle, he denied himself this margin of safety, thereby contributing to the accident.

Stonehouse SIGNS

FOR INDUSTRIAL ACCIDENT PREVENTION

WHEN workers go through the gate, they should find safe working conditions inside. They should feel secure against possible accidents.

"Safe—they come to work: Safe—they go back home" is a fine goal for any Industrial plant.

STONEHOUSE SIGNS

Train your workers in safe practices. Tell them; warn them of hazards and how to guard against them on the job. Do it effectively, economically—with Stonehouse Accident Prevention signs.

Our complete Catalog—64 pages, in full color—is yours, free on request.

Stonehouse SIGNS, inc. MANUFACTURERS • Stonehouse Bldg., 9th at Larimer
Denver 4, Colorado

"Signs Since 1863"

B

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For details, use Key # J-38 on card on page 73)

Thantis® LOZENGES

first aid for throat irritations

SORE THROATS due to coughs and colds, if neglected, may result in lost man hours of work.

THANTIS® Lozenges contain no antibiotic; they produce no unpleasant by-reactions in the mouth.

THANTIS Lozenges relieve pain promptly—reduce infection—act prophylactically.

Twenty-three years' extensive clinical and lay use has proved the safety and effectiveness of this popular product.

® Reg. U. S. Pat. Off.

Mercurochrome®

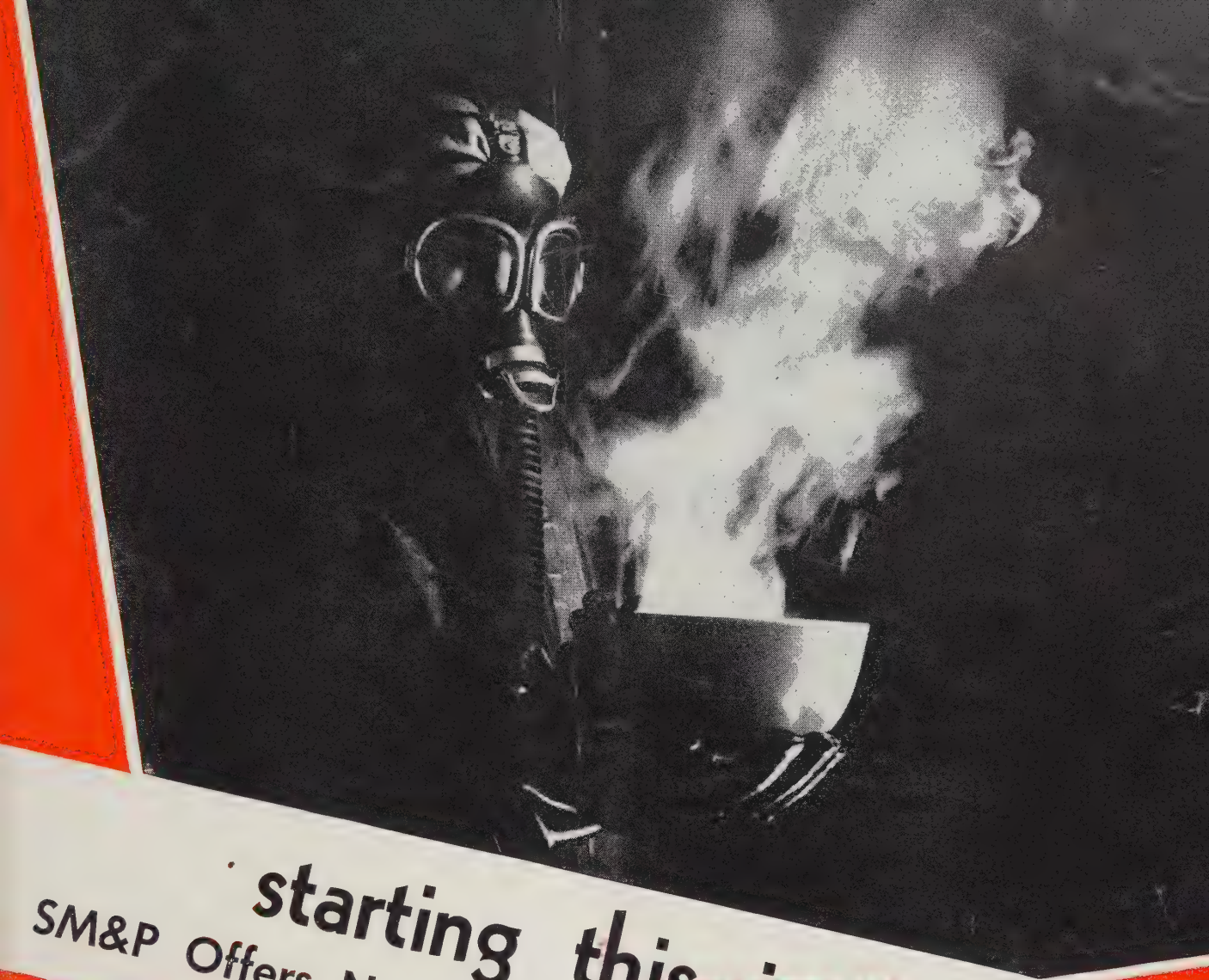
First aid for wounds . . .

Neglect may cause infection which can be prevented by prompt use of 'Mercurochrome.'®

No antiseptic has been proved to be more effective than 'Mercurochrome' for topical application.

HYNSON, WESTCOTT & DUNNING, INC., BALTIMORE 1, MARYLAND

(For details, use Key # J-39 on card on page 73)



starting this issue

SM&P Offers New Health Service (See page 10)

PUBLIC
OCT 14 1955

Safety Maintenance and Production

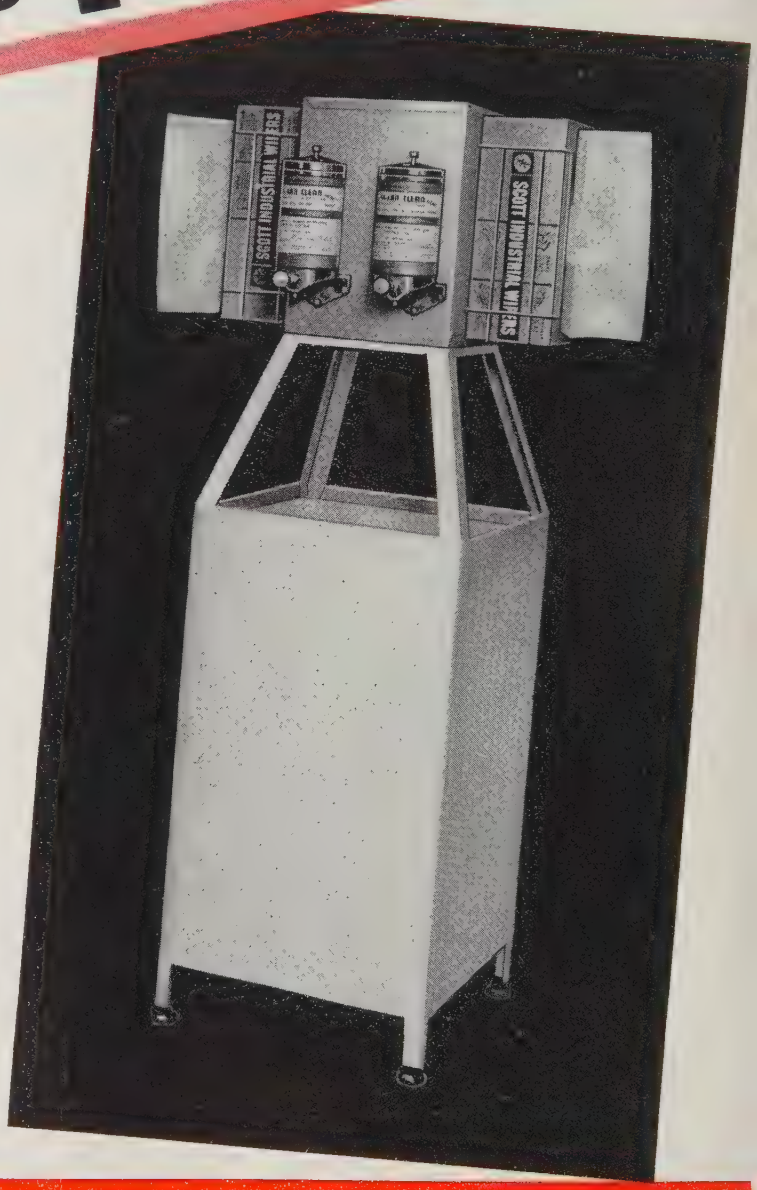
EST. 1901 • AMERICA'S PIONEER MAGAZINE IN ITS FIELD • OCTOBER, 1955 • 50¢

VI-LAN CLEAN

SELF-SERVICE UNIT

No. 815

The dispensing service unit that is well nigh INDISPENSIBLE



VI-LAN CLEAN
fortified with Actamer
the wonderful bacteriostat created
by the Monsanto Chemical Co.

EQUIPPED FOR SCOTT INDUSTRIAL WIPERS

Now You Can Actually Control Dermatitis

The illustration shows the stature of this new VI-LAN CLEAN SELF-SERVICE UNIT, No. 815, equipped with two VI-LAN CLEAN dispensers, two No. 939 Industrial Wiper Brackets for SCOTT INDUSTRIAL WIPERS, and a waste disposal bin of large capacity. This dependable and ever-ready on-the-job washroom service unit, which may be used with or without water, comes to the fore as a needed item in every factory and industrial plant. Managers of production and safety departments praise it, want it and install it, because it saves time, money and lost man hours, insuring industrial health, cleanliness and overall economy. VI-LAN CLEAN is a perfect all-purpose skin cleaner, activated with a potent bacteriostat which overcomes dermatitis and other skin ailments. It contains ACTAMER, a product of Monsanto Chemical Company, and is approved by the American Medical Association. VI-LAN CLEAN does what soap can not do.

Write for descriptive folder TODAY

DAMERON ENTERPRISES

INCORPORATED

427 So. 20th Street — **Louisville 3, Kentucky**

(For details, use Key # K-1 on card on page 85)

WISE TO CHOOSE
SAFE TO USE

THOSE IN THE KNOW

. . . PREFER

Install K-LENS-M Lens Cleaning and Anti-Fogging Stations for clean, clear vision . . . for all types of safety eyewear, glass or plastic.
More Efficient—Lower Cost
Send company letterhead for FREE sample and complete information.

K-LENS-M
REG. U.S. PAT. OFF.

The Acknowledged Leader in the Lens Cleaning Field

The **WILKINS** Co., Inc.
Cortland 2, N. Y.

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VISIT BOOTH 58—NATIONAL SAFETY CONGRESS & EXPOSITION
(For details, use Key # K-2 on card on page 85)

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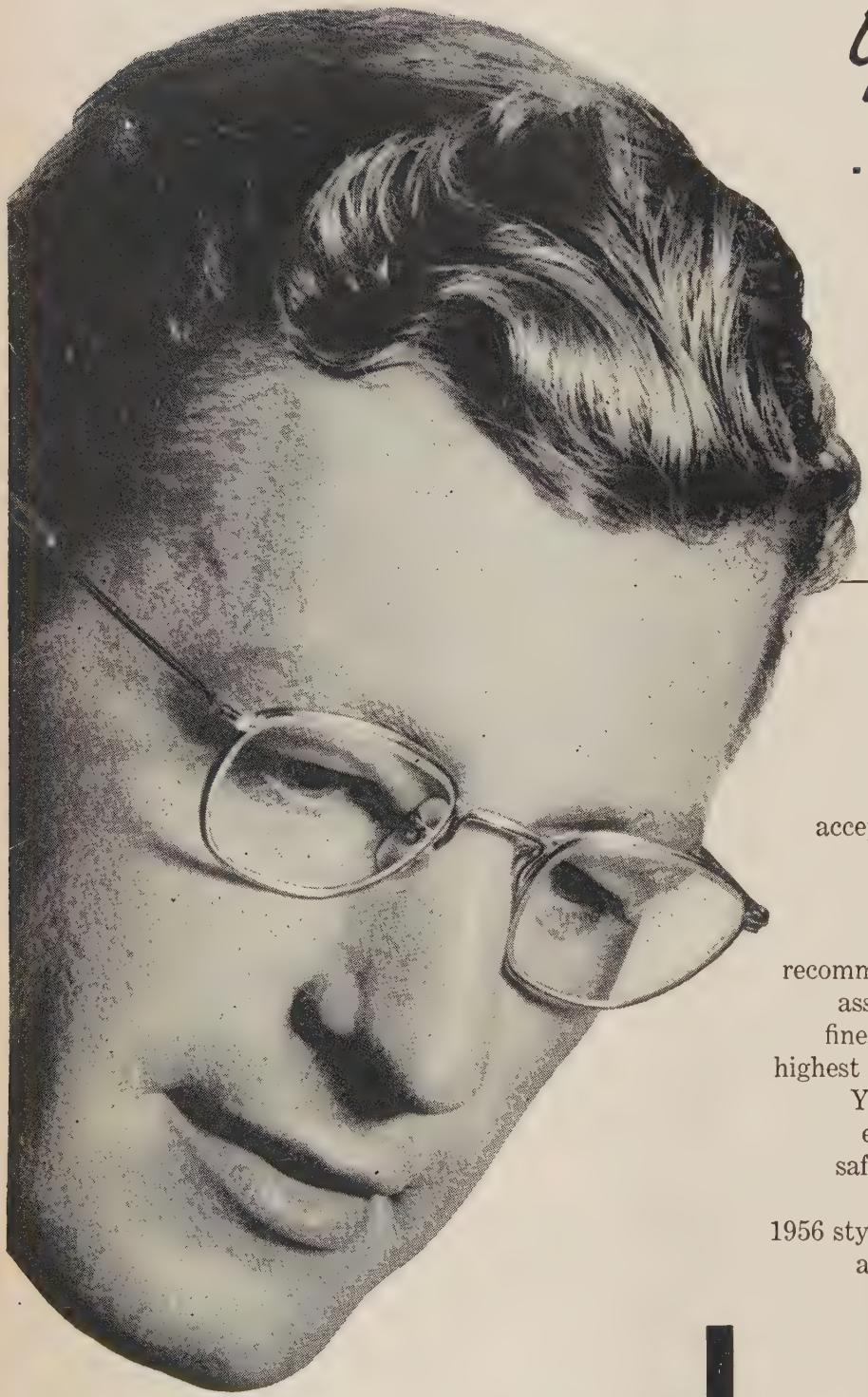
An Evolution



Yes this is a Safety Goggle! ...it's the **NEW AO† F5100** (METAL)

Both with "ULTRASCOPIC VISION"

NEWLY DESIGNED AND ENGINEERED "from the ground up" . . . with greater protection than ever . . . greater field of vision than ever . . . more wearer acceptability than ever . . . with many new features — these are the most advanced of safety glasses.

The safety director who recommends these AO safety glasses rests assured that he has selected the very finest — with lenses and frames of the highest quality and ophthalmic standards. Yes, and in addition he obtains true economy because structurally these safety goggles are *engineered, designed and made to last longer!* These new 1956 styles will be in complete supply soon and will replace predecessor models.

Always insist on AO Trademarked Lenses and Frames

American Optical

SAFETY PRODUCTS DIVISION

SOUTHBRIDGE, MASSACHUSETTS

BRANCHES IN PRINCIPAL CITIES

(For details, use Key # K-3 on card on page 85)

in Eye Protection!

Yes this too is a Safety Goggle!
...it's the **NEW**
AO† F9500
(PLASTIC)

See them at the **AO Booths, Chicago Safety Show.**
Or write for illustrated descriptive brochure.

† T.M. Reg. by American Optical Company

Safety's Supermarket

Directory of Exhibitors—43rd National Safety Congress

Sponsored by the National Safety Council, the exposition will be held at the Conrad Hilton Hotel, Chicago, on October 17–21.

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Go Modern — Buy Magic

MAGIC LENS TISSUE (Silicone treated) sheet is over 50% larger than usual, and has twice the tearing strength. Yet MAGIC costs you less. Loaded with sparkle-power, it polishes — and protects lens — as it cleans. Compact, self-mounting MAGIC Dispenser needs no screws, no drilling. Just stick it to the wall.

MAGIC LENS TISSUE $8.40 per carton
(6 refills per carton)
MAGIC LENS DISPENSER $2.50 each

All prices F.O.B. shipping point.

"We spend lots of money for safety - but nothing pays off like our eye-safety program."

Yes, nothing pays off like an eye-safety program — using MAGIC Cleaning Stations. And in your war against obsolescence you can exchange any other type dispensers for new Magic dispensers—FREE. Wire or write us today or order through your Safety Jobber.

MAGIC HEAVY-DUTY Cleaning Station is for dirty, oily areas or where Anti-Fog protection is necessary — on plastics or any eyewear. Pressure-packed. About 1,400 applications per can. One MAGIC can equals 4 old-fashioned bottles. That is the first saving. No pump. No bottles to refill. Indestructible steel Dispenser locks can in place. Releases sheets 1-by-1, not in bunches, greatly reducing waste. HEAVY-DUTY Paper (not Silicone-treated) is a superb, super-strong, wet-strength tissue. Naturally, no scratching on plastic, and no lint.

MAGIC HEAVY-DUTY DISPENSERS $5.95 each
CLEANING & ANTI-FOGGING FLUID (12—12 oz. cans) $12.50 per carton
HEAVY-DUTY PAPER (18 giant refills 760 sheets each) $11.60 per carton

Magic Cleaning Stations

T. M. REG. U. S. PAT. OFF.

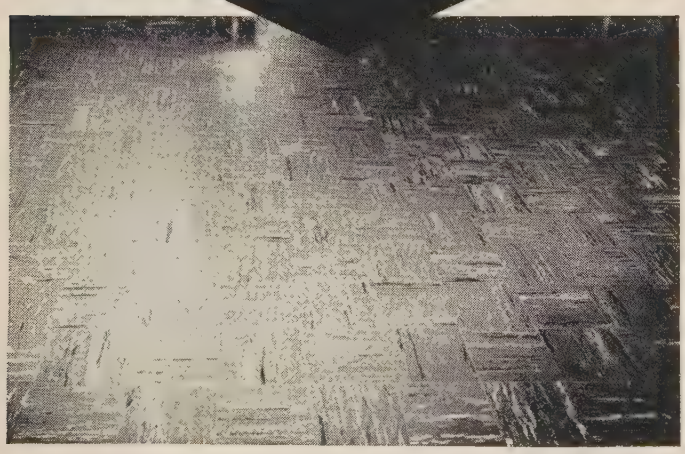
The Silicone Paper Company of America, Inc.
General Offices: 75 E. 45th St., New York 17, N. Y.

(For details, use Key # K-4 on card on page 85)

The 1 dressing that gives you 3 major floor maintenance benefits!

MYCO POLY-GLO

The New, Heavy Duty Non-Wax Floor Dressing



1

LABOR-SAVING EASE OF APPLICATION

Poly-Glo applies easily and quickly . . . it dries in minutes to a tough, hard glossy film. Poly-Glo strongly resists heel marking, dirt and water . . . and will *not* yellow or discolor the lightest floors.

2

EXCELLENT SLIP RESISTANCE

The "Slip Test" conducted by Underwriters' Laboratories, Inc., proves Poly-Glo has a slip resistance that rates "excellent" on all surfaces. Reason enough for you to use Poly-Glo on all your floors.

3

SPARKLING BEAUTY WITHOUT BUFFING

Self-polishing Poly-Glo gives you sparkling beauty without hours of machine buffing. To keep floors dust-free and polished, sweep daily with yarn broom treated with MYCO Yarn Broom Dressing. Damp mopping with cold water whisks off clinging dirt, will not remove Poly-Glo's protective film or lustre.

USE POLY-GLO *SAFELY* ON ALL TYPES OF SEALED WOOD, RESILIENT and NON-RESILIENT FLOORS!

ONLY POLY-GLO DOES IT! AFTER ORIGINAL APPLICATION YOU CLEAN AND POLISH FLOORS IN ONE OPERATION!

For floors subjected to heavy traffic, still coated with Poly-Glo, just damp mop with solution of Poly-Glo and water. It removes surface soil, eliminates the need of stripping, protects the floor. Machine buffing after removal of surface soil restores original lustre.

MYCO PRODUCTS SAVE TIME • EFFORT • LABOR

MYCO

MASURY-YOUNG COMPANY

76 Roland Street, Dept. 60, Boston 29, Mass. • In Canada: Toronto, Ontario

BRANCH OFFICES IN PRINCIPAL CITIES

MYCO is a registered trademark of MASURY-YOUNG COMPANY, and identifies the company's complete line of first-quality floor maintenance products manufactured under exacting standards since 1857.

Visit our booth #224-225 at the National Safety Congress, to be held in Chicago, October 17-21.

(For details, use Key # K-5 on card on page 85)

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formerly "SAFETY ENGINEERING"

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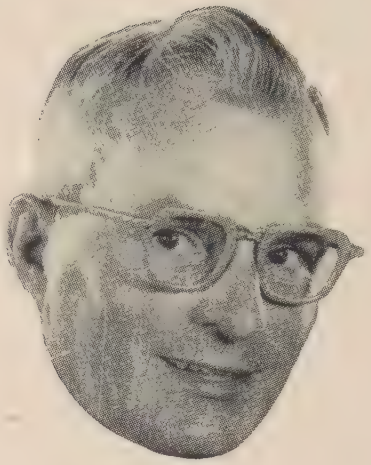
Cover picture by courtesy of E. I. Du Pont de Nemours & Co., Inc.

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

Bausch & Lomb introduces brilliant *NEW* industrial styling in . . .



Titan

the first combination-type safety frame—metal bridge with acetate eyewires and temples—for men and women

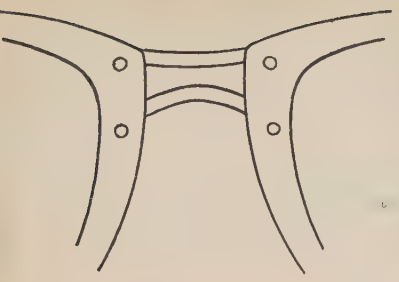
Another step forward by Bausch & Lomb in making safety eyewear more acceptable to workers. Ideal in all applications of spectacle-types —with plano Bal-SAFE lenses, or Bal-SAFE prescription lenses—in eye, bridge and temple sizes to fit anyone in your shop.

There's a B&L industrial eyewear representative in your area, glad to demonstrate the new B&L Titan, or any other feature in the B&L line, the most complete in the industrial vision field. For further details write: Bausch & Lomb Optical Co., 90546 Smith St., Rochester 2, N. Y.

BAUSCH & LOMB

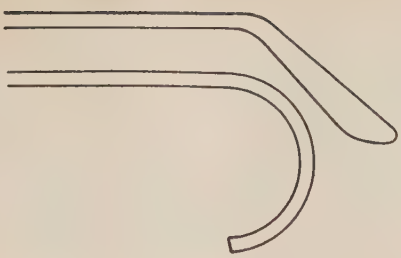
SINCE B&L 1853

(For details, use Key # K-6 on card on page 85)



Bridge trussed and riveted for added strength

Dual Nickel silver bridge is a single piece held rigidly to frame with four sturdy rivets, affording maximum strength, plated for corrosion resistance.

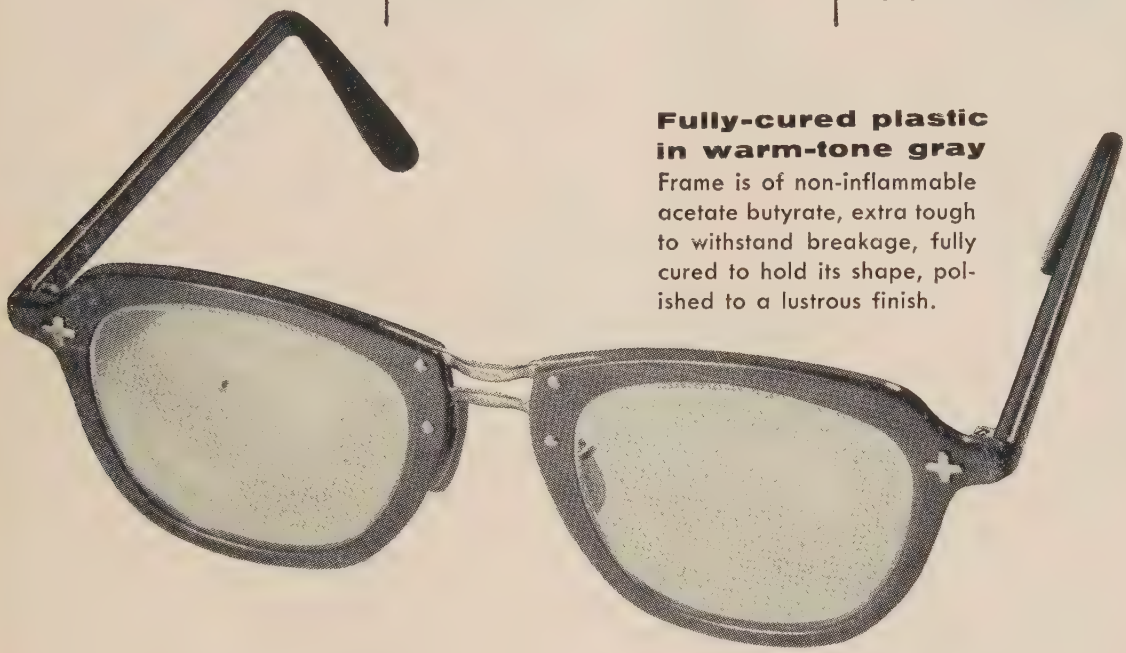


Temples interchangeable for convenience in fitting

Your choice of spatula or cable temples to suit the individual worker.

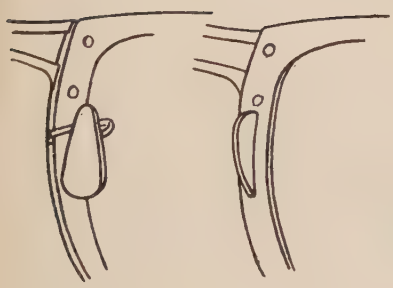
Safety-Cross plaque says "SAFETY" at a glance

You can never confuse Titan with non-safety specs. Safety-cross plaques on front identify it instantly, prevent substitution.



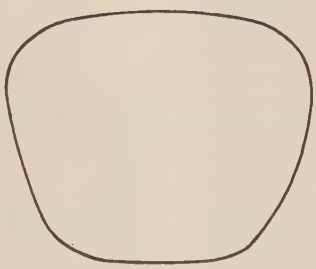
Fully-cured plastic in warm-tone gray

Frame is of non-inflammable acetate butyrate, extra tough to withstand breakage, fully cured to hold its shape, polished to a lustrous finish.



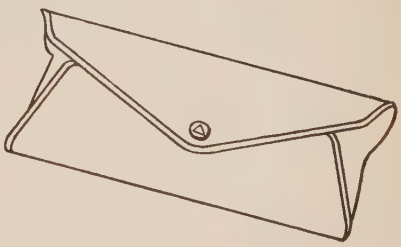
Adjustable pads optional for added comfort

Your choice of adjustable nose pads, or molded rigid plastic pads. The adjustable pad is an integral part of the bridge.



Lenses shaped for wider visual field

Large, modern lens shape is nicer to look *at*, easier to look *through*. It conforms to eye movements.



In tough, washable vinyl steel-reinforced case

New B&L snap-closing Cari-All case provides ample protection for Titan, will accommodate dress glasses while worker is on the job. Each case includes identification card in pocket under flap.

See Titan at the National Safety Congress Chicago, October 17th thru 21st

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It's Safe to Say

• NEW INDUSTRIAL HYGIENE SERVICE

STARTING with this issue, **Safety Maintenance** will offer to its readers a new service which will include a section edited in cooperation with Occupational Health Institute, the educational activity of Industrial Medical Association. We will now be able to refer inquiries based on industrial hygiene problems to our Editorial Advisory Board for unbiased recommendations and professional opinion.

On page 55 of this issue is the announcement of this new affiliation which is another "first" in our history spanning 55 years. Readers are invited to submit inquiries to the editors for transmittal to this new Industrial Hygiene Editorial Advisory Board. In keeping with established ethics in matters dealing with all phases of the medical profession, inquiries, comments and letters seeking information covering preventive and control measures will not be published.

The Occupational Health Institute was established in 1954 by representatives of business and the medical profession as a non-profit educational activity of the Industrial Medical Association. It is the successor organization of the American Foundation of Occupational Health, founded by the IMA in 1954.

The Institute was formed to guide industrial managements in the development of employee health programs and to aid companies in dealing with problems of employee health.

It provides a clearing house for the exchange of information and experience among management and medical staffs . . .

It gives companies a place to turn for help in dealing with health problems peculiar to special industries or localities . . .

It makes surveys of company medical facilities and reports to management their status and efficiency . . .

It awards the OHI Certificate of Health Maintenance to companies whose medical services meet the standards set by the Industrial Medical Association.

The Institute recognizes the pressing need for many projects such as:

Research in many industrial health problems as yet unanswered.

The study of adequate methods of protection against occupational injuries and disease.

Helping to meet the need for more trained men and women in health maintenance programs in industry through scholarships and fellowships in industrial medicine, nursing and hygiene.

Because the Institute provides all services without charge and depends upon financial support from managements to carry out its program, those projects will be launched as funds become available.

The Institute headed by Dr. Frank A. Calderone, President, is guided by a Board of Directors representative of industry and the medical profession, a Board of Industrial Advisors, an Advisory Committee of Industrial Nurses and an Advisory Committee of Industrial Hygienists. It makes available the experience of men and women who have been carrying out effective programs of employee health in all sizes of plants, in all types of industry, in every part of the United States, Canada and Hawaii. This new monthly service should be of invaluable assistance to our readers and we invite inquiries based upon industrial health and hygiene problems.

• GREATER EMPHASIS ON SAFETY

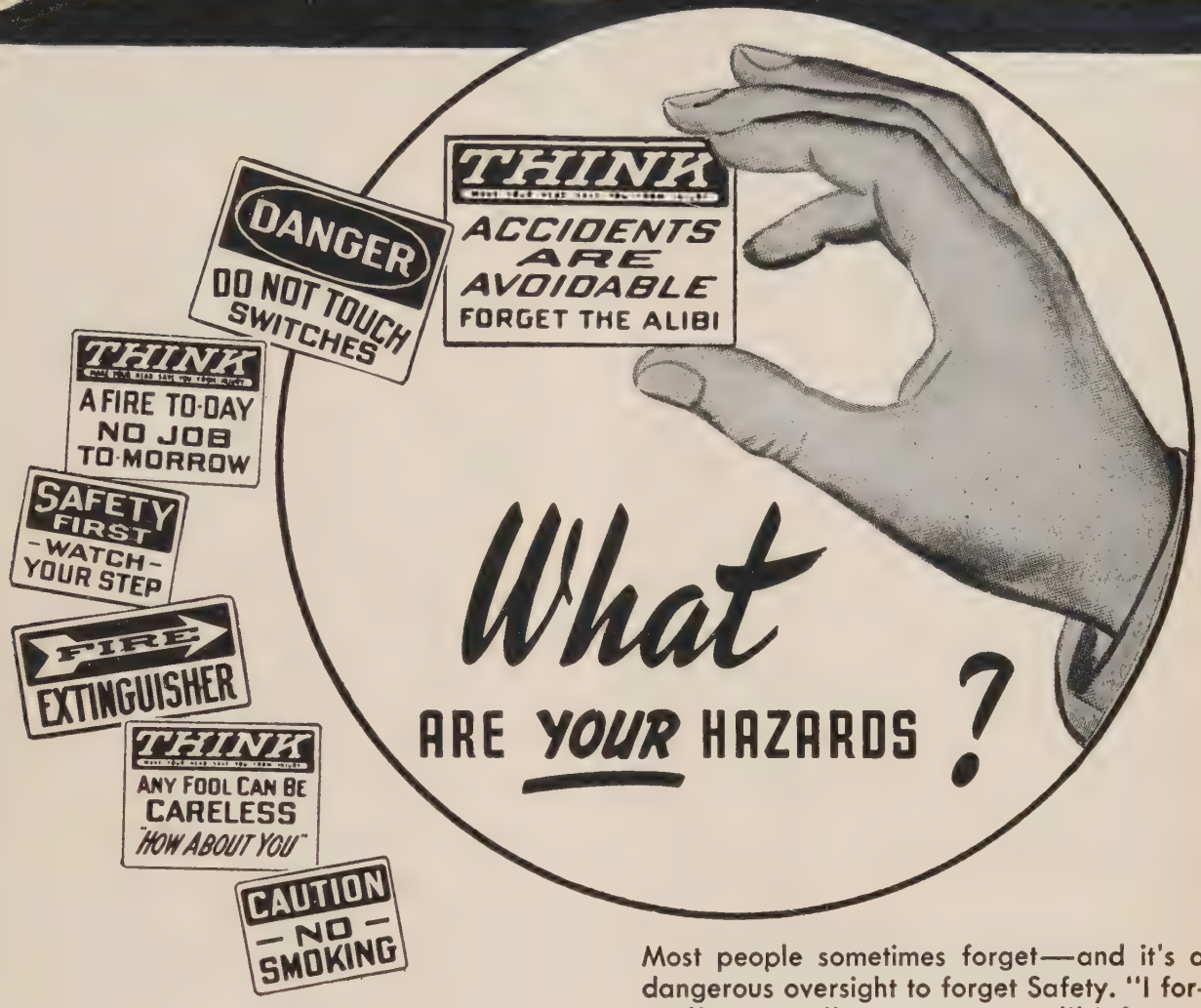
FOLLOWING publication of "Fasten Your Seat Belts" appearing on this editorial page last month, comes the announcement from many of the leading motor vehicle manufacturers that buyers of 1956 models will have the option of obtaining safety seat belts in privately owned automobiles.

In fact, leaders of the motor industry are placing greater emphasis on safety as the result of the nation's urgent need of reducing the appalling toll on our streets and highways. To this end newly designed steering wheels, dashboards, sun-visors, etc., will be shown on many new models in a stepped-up campaign to prevent or at least minimize motor vehicle injuries.

Leading safety authorities have concluded on-the-spot tests proving the efficacy of built-in seat belts to prevent drivers and passengers from being hurled out of their seats. If the belts will do their job, why shouldn't they be standard instead of "optional"?—H.A.

Stonehouse SIGNS

FOR INDUSTRIAL ACCIDENT PREVENTION



Most people sometimes forget—and it's a dangerous oversight to forget Safety. "I forgot" is an all too common alibi for an accident.

STONEHOUSE SIGNS

To help workers *remember*, post Stonehouse Safety Slogans and Reminders signs. Just the few words on any of them help to promote safety.

The tendency to forget should not be overlooked—it's serious. Teach your workers to cultivate the practice of safety by reminding them to *remember* its blessings.

Have you our Catalog? 64 pages, in full color. It's free on request.

Stonehouse
SIGNS, inc. MANUFACTURERS • Stonehouse Bldg., 9th at Larimer
Denver 4, Colorado

"Signs Since 1863"

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For details, use Key # K-7 on card on page 85)

and you can improve their record through the simple expedient of establishing a Safe Driver Awards Program. Your company's emblem becomes a warm handshake for the driver through public RECOGNITION of his capabilities and loyalty.

If you have not already worked out an awards program, our free brochure will provide you with all the necessary detail, or we will be glad to send a representative to see you and set up a program.

Our specialized art department will create an awards emblem that will immediately identify your product and symbol. Our advice and design are free.

May we suggest that you fill in and mail the coupon below to get your program off to a quick and efficient start.

Fill out the attached coupon and mail it today to:

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- ☐ I would like your representative to call
- ☐ I would like more information about your free planning and art service.

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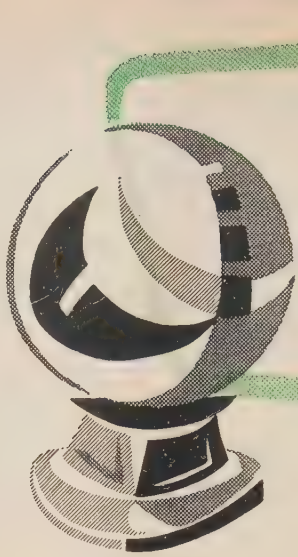
Title:.....
Firm:.....
Address:.....
City, State:.....

(Use Key # K-8 on Inquiry Card on page 85)



the future shows

Chicago, Ill. *Oct. 17–21*

Forty-third National Safety Congress and Exposition (Conrad Hilton and other hotels). R. L. Forney, secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Charleston, S. C. *November 3–4*

Eighteenth Annual South Carolina Accident Prevention Conference (Francis Marion Hotel). J. Donald Watson, Jr., Secretary-Treasurer, P. O. Box 539, Columbia, S. C.

Kansas City, Mo. *November 14–18*

Eighty-third Annual Meeting of the American Public Health Association and related organizations (Municipal Auditorium). Dr. Reginald M. Atwater, executive secretary, American Public Health Association, Inc., 1790 Broadway, New York 19, N. Y.

New Orleans, La. *December 12–13*

Sixth Annual Louisiana Safety Association Conference. (Roosevelt Hotel). J. R. O'Donnell, Avondale Marine Ways, Inc., P. O. Box 1030, New Orleans, La.

Philadelphia, Pa. *January 23–26*

Seventh Annual Plant Maintenance & Engineering Show (Convention Hall). Clapp & Poliak, Inc., managers, 341 Madison Ave., New York 17, N. Y.

San Francisco, Calif. *February 2–3*

Sixth Annual California Statewide Meeting of the Governor's Industrial Safety Conference (Fairmont Hotel). Department of Industrial Relations, 965 Mission St. (Room 400), San Francisco, Calif.

Atlanta, Ga. *March 4–6*

Southern Safety Conference & Exposition (Biltmore Hotel). W. L. Groth, Executive Director, P. O. Box 8927, Richmond 25, Va.

Los Angeles, Calif. *March 19–21*

Third Annual Southern California Safety Congress & Exhibit (Ambassador Hotel). Greater Los Angeles Safety Council, 610 S. Main St., Los Angeles 14, Calif.

Klamath Falls, Ore. *April 5–7*

Forest Products Safety Conference. George Metzger, Secretary-Manager, c/o Willamette Valley Lumber Operators Association, Eugene, Oreg.

New York, N. Y. *April 16–20*

Twenty-sixth Annual Greater New York Safety Convention & Exposition (Hotel Statler). George E. Decker, chairman, Greater New York Safety Council, 60 E. 42nd St., New York 17, N. Y.

Washington, D. C. *May 14–16*

President's Conference on Occupational Safety.

Rochester, N. Y. *May 22–24*

First Genesee Valley Safety Conference and Exhibit (Rochester Chamber of Commerce Building) William H. Keeler, secretary-treasurer, Rochester Safety Council, 55 St. Paul St., Rochester 4, N. Y.

Explosion-Proof Twins!

COMPLETELY Explosion-Proof!

Yes, this is the *first* industrial vacuum cleaner which combines portability, efficiency, and *complete safety.*

The MULTI-CLEAN H-500 EXPLOSION-PROOF Vac has been tested by UL and approved for use in Class I, Group D and Class 2, Group G locations.

This now means that you can use this wet-dry vac amid explosive gases, vapors, dust, and in dozens of other situations where danger of explosion or fire had previously made use of a vac too risky.

It's ideal for cleaning floors, walls, overhead pipe, machinery or stock bins where there is grease, chemicals or other flammable materials. And since it works equally well for wet or dry pickup, it's just the thing for cleaning combustible material from storage tanks.

Mills and elevators, chemical plants, petroleum refineries, gas plants, and distilleries are just a few of the locations where this new vac is especially suited.

For more information on the H-500, its powerful 7/8 hp totally enclosed motor, 100% bronze or aluminum construction, and spark-proof electrical fittings . . . see your MULTI-CLEAN Distributor or mail coupon below.

The MULTI-CLEAN EXPLOSION-PROOF Floor Machine, shown below, is engineered for scrubbing, cleaning, buffing, and polishing in presence of combustible gases, liquids, and dust. The completely-enclosed, explosion-proof motor, heavy duty safety switch and connection box are all approved by Underwriters Laboratories, Inc.

Available in 14″ and 16″ sizes. Both can be equipped with a 3-gallon solution tank and channel feed brush for mechanized scrubbing.

Multi-Clean Explosion-Proof Floor Machine

MULTI-CLEAN Products, Inc., Dept. SMP-105
2277 Ford Parkway, St. Paul 1, Minnesota

Gentlemen: Send me complete information on the:

- ☐ Explosion-Proof Vacuum Cleaner
- ☐ Explosion-Proof Floor Machines

Name_____ Title_____

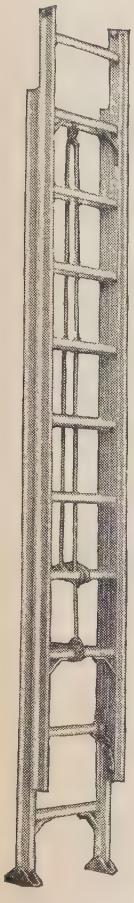
Firm_____

Address_____

City_____ Zone___ State_____

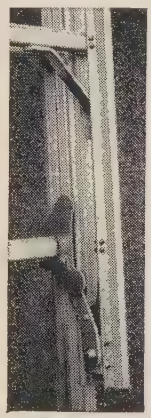
(For details, use Key # K-9 on card on page 85)

SAFETY ALUMINUM LADDERS



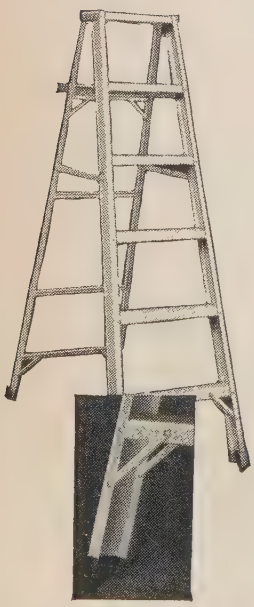
ALUMINUM EXTENSION LADDER EASIER TO HANDLE, STRONGER

This Safety Aluminum Extension Ladder offers aluminum's natural advantages of light weight, strength and durability. Weighs only 1¾ lbs. per foot and is easily carried even in the longer lengths. Positive, self-locking safety locks (see illustration) are easily adjusted at any height. Rungs are ⅞″ x 1¼″ oval and are double-bolted to rails. They have a heavily serrated top edge to prevent slipping. Side rails are 2⅞″ deep on 16′ and 32′ sizes,



3⅜″ deep on 36′ and 40′ sizes. Feet have super grip rubber treads and self sharpening spikes. Available in 16′, 20′, 24′, 28′, 32′, 36′ and 40′ lengths. Single ladders, with same features as extension type, are available in 8′, 10′, 12′, 14′, 16′, 18′ and 20′ lengths. Write The Patent Scaffolding Co., Inc., 38-21 12th St., Long Island City 1, N. Y., Dept. SM&P

ALUMINUM STEP LADDER HAS SPECIAL SAFETY FEATURES



Designed and built with extra safety in mind. Steps are deeply grooved to prevent slipping. Safety-type spreads never pinch fingers. Heavy-duty rubber boots on all four legs eliminate slipping, and marring of floor. Bottom step has double bracing (see inset). Pail rest is self-closing for added convenience. Extremely easy to handle, weighing only 2¾ lbs. per foot. 27-inch, 7 lb. Aluminum Step Stool also available. Write The Patent Scaffolding Co., Inc., 38-21 12th St., Long Island City 1, N. Y., Dept. SM&P

Branches in All Principal Cities

(For details, use Key # K-10 on card on page 85)

Check List of Aids to Production:

Through Safety—

Chemical Leak Cover 25
Respiratory Equipment 30
Press Guard Color Code 41
Emergency Power 43
Reflector Guard 44
Safety Awards 48
Portable Safety Gate 77
Reflective Garments 80
Kiln Cooling Fans 97
Exit Lock 97
Dripless Reagent Bottles 98
Radium Signs 98
Ventilated Arm Guard 99
Warning Tapes 99
Plastic Safety Spectacles 100
Chip-Absorbing Blocks 100
Bulletin Boards 100
Plastic Shield-Goggle 101
Adhesive Letters 101
Stair Climbing Truck 101

Through Maintenance—

Leak-Indicating Covers 25
Maintenance Check-List 26
Respirator Maintenance 30
Emergency Battery Power 43
Portable Barrier 77
Extinguisher Maintenance 90
Vibration Mountings 98
Beam Scaffold 98
Lead Gas Catalytic Exhaust 98
Protective Coating 98
Pump Sticking Preventive 99
Corrosion Inhibitors 99
Approved Plastic Panels 101

Through Industrial Hygiene—

Respiratory Equipment 30
Audiometers 56
Dermatitis Prevention 59
Dermatitis Relief 62
Aerosol Burn Spray 62
Waterless Hand Cleaner 62
Scoop Type Stretcher 62
Silicone Cream 63
Improved Magnifier 63
Water Cup Dispenser 63
Eye Fountain 63
Waterless Skin Cleanser 64
All-Purpose Stretcher Kit 64
Bandage Dispenser 64
Glass Sliver Barrier Cream 64
Radiation & Burn Treatment 64
Ammonia First Aid Kit 65
Aerosol Burn Kit 66
Antiseptic Cleaner 66
Wall Fountain 66
Chemical Burn Medication 66
Injured-Foot Shoe 66
Aerosol Burn Treatment 69
Ventilating Fans 97
Insecticide Fog Generator 97
Carbon Monoxide Eliminator 98
Filter for Dust Collector 99
Dwarf Dust Collector 100
Methane Indicator 101

Through Fire Protection—

Wheeled Carbon Dioxide Units 90
Hand Carbon Dioxide Units 91
Vaporizing Liquid Extinguishers 92
Wheeled Chemical Foam Units 94
Hand Chemical Foam Units 95
Fire Door Exit Lock 97
In-Plant Fire Truck 97
Fire-Retardant Paint 100
Approved Plastic Panels 101
Adhesive Letters 101

Armortred NEOPRENE Soles and Heels

SAFETY—SERVICE AND STYLE

NEOPRENE COMPOSITION
A standard of quality

14 & 18 Iron—Blk-Brown

The largest selling sole of its kind

NEOPRENE CORK-GRIP
It's light—yet rugged

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A soft flexible step with day-long comfort

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It's new—it's colorful

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A safe-sure step and tough long wear

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ARMORTRED Soles made with DUPONT NEOPRENE

With Matching Heels

FOR—PEAK PROTECTION AGAINST HEAT, OILS, SOLVENTS ETC.
FOR—EXTRA MILES OF SAFE SERVICE

MANUFACTURED AND DISTRIBUTED BY **QUABAUG RUBBER COMPANY** NORTH BROOKFIELD, MASSACHUSETTS

(For details, use Key # K-11 on card on page 85)

Noise Control

...for Personnel Safety and Maximum Effectiveness

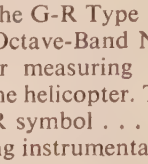
Optimum performance of any aircraft depends on peak efficiency in the operation of power plant, airframe, and *the humans controlling the whole.*

In designing the new Navy HOK-1 helicopter, engineers of The Kaman Aircraft Corporation kept the human consideration much in mind. To insure minimum noise distraction and top personnel efficiency, these engineers made exhaustive sound measurements and analyses. The levels and frequency characteristics of sounds within the cockpit were accurately measured under various flight conditions. Having first made measurements and gauged the problem, the designers were in a position to minimize the troublesom frequency components.

Kaman engineers wanted both accurate and reliabl sound-measuring equipment to perform this importar work. They chose the G-R Type 1551-A Sound-Level Mete and Type 1550-A Octave-Band Noise Analyzer as the mos effective means for measuring the "whirring" broad-fre quency sounds of the helicopter. These men knew they coul depend on the G-R symbol . . . trademark for dependabl electronic-measuring instrumentation throughout the world

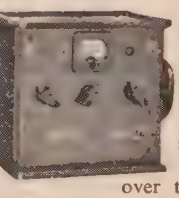
A complete line of G-R Sound-Measuring and Analyzin Equipment is available.

Engineer in helicopter rides backward to read G-R Sound-Level Meter and Octave-Band Noise Analyzer. Microphone pickup hangs between seats.



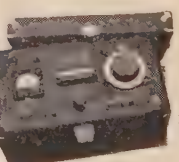
Type 1551-A
Sound-Level Meter, $360

Basic sound-measuring too for reading the sound-pre sure level at its microphon in terms of the standar A.S.A. reference level.



Type 1550-A
Octave-Band Noise Analyzer
$535

For rapid, convenient broad band analysis of "unpitched sounds where the nois energy is widely distribute over the audio spectrum and usually caused by shock excitation, impact c turbulence.



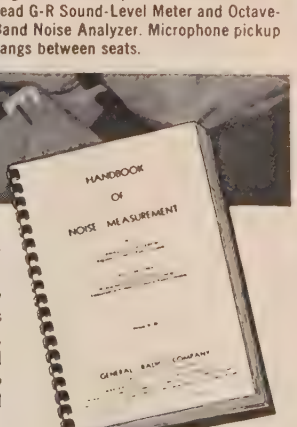
Type 760-B
Sound-Analyzer, $520

For narrow-band measure ments of pitched sounds . . best suited to measurin noise emitted by rotatin reciprocating or other cyclic mechanisms whe prevalent frequency components are harmoni ally related to motor speed or other characteristi

Type 1555-A
Sound-Survey Meter, $135

Low-cost pocket-size soun level meter for prelimina investigations prior to c tailed study and analy with above equipment.

Accessories Available for Sound-Level Meter . Vibration Pickup . . . Sound-Level Calibrat . . . External A-C Power Supply . . . Dynam Condenser and High-Sound-Pressure Mic phones.



Should you need basic information on the characteristics of sound and the overall problem of noise and its measurement, write for the HANDBOOK OF NOISE MEASUREMENT by Dr. L. L. Beranek of MIT and Dr. A. P. G. Peterson of the General Radio Company. This publication of over one-hundred pages describes measuring equipment and techniques, interpretation of results, and the most fruitful approach toward minimizing detrimental sounds. The HANDBOOK is available from G-R at $1.00 to cover printing and mailing costs only. To avoid unnecessary clerical expense, please enclose check or dollar bill with your order.

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(For details, use Key # K-12 on card on page 85)

SEND THIS PERSONAL SAFETY MESSAGE

TO EVERY ONE OF YOUR EMPLOYEES!

Safety is made attractive...vivid...colorful...

each worker clearly sees how safety benefits him.

You get enthusiastic safety cooperation instead of

tolerance...from every employee...every month.

YOUR
Safety News
PUBLISHED IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
PROTECT YOURSELF
3
WAYS
There are three safe practice ways that do the most good in keeping free of accidents, all based on your personal desire to know safety and keep yourself safety-minded by studying the hazards of your work They are
1 Make sure all guards are in place and working and wear the personal protective equipment your job requires
2 Learn the safe way to do a job and do it just that way.
3 Report, avoid or eliminate all unsafe conditions.
As we see it: Safety is part of every job and like any craft it requires skill.
John Doe

Size 5½" wide x 8½" deep

...talks the worker's language

Full of color, pictures, humor and snap, it makes safety interesting and down-to-earth. 12 times a year it covers every accident hazard. Nationwide, leading industrial firms state it's the *only safety paper their employees will read* . . . and take home to their families.

It gives you the advantages of personal contact, saving time and money. When it prevents one Lost Time accident, it has more than paid its cost for the year. Try it . . . it works!

Your Imprint Here!

makes YOUR SAFETY NEWS your own publication . . . a good-will ambassador . . . another force for better industrial relations.

Every employee feels bucked-u by a note from the boss. If you d sire, your facsimile signature c be printed here.

Your Signature Here

NOTE:
Your Safety News is designed to promote better employer-employee relations. Every item is carefully weighed from this viewpoint.

ISIDE PAGES
(pages 2 and 3)

So Goes the World
Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well!
WANTED
From the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES WORK OVERTIME
There was a time when Safety Shoes were clumsy and uncomfortable but those days are gone forever. Today the Safety Shoe manufacturers offer hundreds of different styles and lasts to meet safety requirements. The modern Safety Shoes look the same as other dress or work shoes of any make, differing only in the addition of two ounces of steel toes.
Well fitted Safety Shoes now are good for on or off the job use in fact many of us never wear anything else.
Dress for Safety
SAFETY SHOES
Ted: "My feet burn like blazes. Do you think a mustard bath would help?"
Ned: "Sure! There's nothing like a little mustard on hot dogs."
Be bold in what you stand for but careful in what you fall for.
Most of our troubles are caused by too much bone in the head and not enough in the back.
We think the temperament of women would be improved 'thousand and percent if they'd wear comfortable shoes.
FALLS
Falls are the second greatest cause of injuries in industry and a source of many severe cases. It is those two-level falls that really do the damage.
You can't be too careful when working with or on ladders—scaffolds—ramps—stairs or any elevation. You are just plain lucky if you don't break bones from bad falls of this kind.
Slippery surfaces, loose objects, defective, rough and uneven floors cause about half of the falls. These falls are bad enough but usually not as serious.
Never clutter up stairs or aisles. Help keep them free of tripping hazards and you may save some one from a bad fall. Maybe yourself.
FALLS KILL 30 EVERY DAY

YOUR EMPLOYEE'S INTEREST

Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

...OCK-FULL OF ILLUSTRATIONS

Artwork is carefully chosen to lodge home each point. The cartoon style makes YOUR SAFETY NEWS as familiar and as welcome as the Sunday supplement.

...E "FOLKSY" APPROACH

Keeping the contents folksy, adding the grace note of humor, delivers your safety message with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of tolerance.

...VID COLOR

Generous use of color gives sparkle, adds to the attention-riveting qualities of YOUR SAFETY NEWS. Each issue is as lively as any news-stand favorite.

HOW TO ORDER

YOUR SAFETY NEWS may be ordered with either the Standard imprint or with your Own Special Imprint. The Standard Imprint reads PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER.

You can personalize YOUR SAFETY NEWS with the name of your firm and the name or facsimile signature of a company representative as illustrated. Give full instructions for your Special Imprint on the order blank below.

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Item (2) INDIVIDUAL NAME OR SIGNATURE, if desired. On a sheet of white paper, please show, in black ink, the individual name or signature, if desired, which is to appear each month on the first page of YOUR SAFETY NEWS.

NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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☐ Special Imprint ☐ Standard Imprint

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Per Month	Your Special Imprint	Standard Imprint
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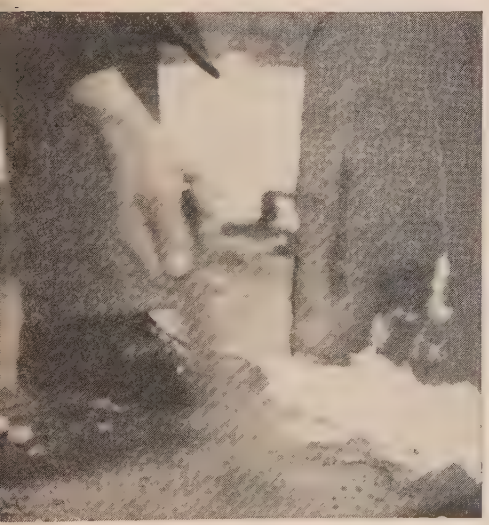
1,001 to 3,000 copies	3½¢ each	3¢ each
501 to 1,000 copies	4½¢ each	4¢ each
200 to 500 copies	5½¢ each	4½¢ each
100 to 199 copies	6½¢ each	5¢ each
25 to 99 copies	*	5½¢ each

*** 5½¢ each plus $3.00 per month for Special Imprint** **F.O.B. New York, N. Y.**

ZORBALL

keeps all slippery surfaces

ZORBALL *absorbs oils, greases, paints, chemicals.*



Sprinkle freely on icy, wet walks, drives, etc.

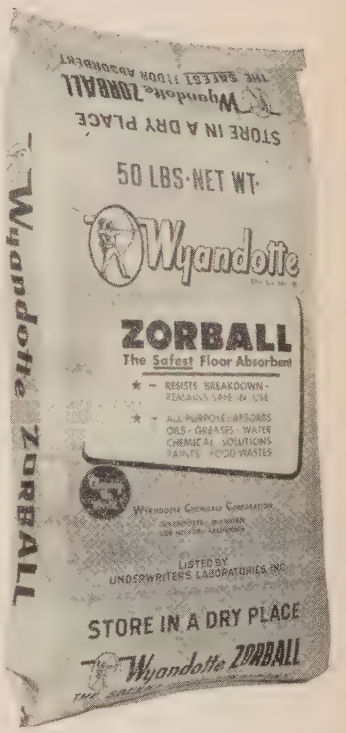
SKIDPROOF

Avoid accidents, work slowdowns due to slipping on oily, greasy . . . or icy . . . plant steps, floors, ramps, walks, driveways, loading and shipping platforms with all-purpose Wyandotte ZORBALL!

ZORBALL is the safest, most effective floor absorbent you can buy — remains skidproof after absorbing *any* liquid, and it's fireproof, even when saturated with combustible liquids! ZORBALL is harmless to fabric, wool, metal, rubber, asphalt and wood surfaces, grass; harmless to skin.

ZORBALL has the lowest use-cost of any floor absorbent. It has exceptional resistance to breaking down, mudding, dusting, caking, and tracking. And, after drying out, it can be used again. Remember — it costs less to *prevent* accidents with WYANDOTTE ZORBALL!

For a free sample or complete data, mail coupon below, or call your Wyandotte representative now! *Wyandotte Chemicals Corporation, Wyandotte, Michigan. Also Los Nietos, California. Offices in principal cities.*



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CHEMICALS
J. B. FORD DIVISION

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Wyandotte Chemicals Corp.
Wyandotte, Michigan

☐ Send FREE sample and data on ZORBALL
☐ Have representative call

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(For details, use Key # K-13 on card on page 85)

COVER GOGGLES
FOR COMPLETE PROTECTION

WATCHEMOKET eye SAVERS

SOFT VINYL FRAME
For Safe, Comfortable, Form-fit

Model 440 SV—clear frame **460 SV**—green frame
Heavy Impact Goggles with replaceable, optically perfect, methacrylate lenses.
Clear Lens (C) .125" thick
Green Lens: Light (G2) Medium (G4)
Dark (G6) .080" thick

Model 441 SV—clear frame **461 SV**—green frame
Average Impact Goggles with replaceable, optically perfect, acetate lenses.
Clear Lens (AC) .060" thick
Green Lens (AG) .050" thick

Models 490 or 491 — opaque black frames
Furnished with Stac-Vent only
Methacrylate Lenses: same as 440
Acetate Lenses: same as 441

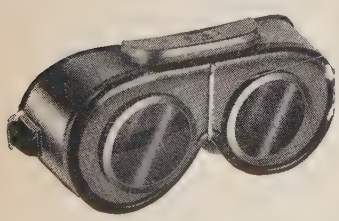
STAC-VENT (SV) . . . a new principle in goggle ventilation, proven to provide clearer fog-free vision, more comfort and greater safety. Other types of ventilation available: Regular Ventilation (RV), Screen Ventilation (CV), or No Ventilation (NV).

Safe, Shatterproof Lens Easily Replaced. Eye Savers lenses will not shatter or splinter with impact . . . will not pit. Lenses are easily replaced by removing the "lock bar" that positively locks the lens in the frame. No special tools needed. Lenses are interchangeable in all Soft Vinyl Frames.

Fits Over Any Prescription Frame — Extra wide 6" lens in the large vinyl frame provides ample space for metal or horn rimmed glasses. Frame forms a bumper that prevents the lens surface from touching when goggle is laid flat on a table or bench.

Safer, More Comfortable to Wear — Eye Savers, s Vinyl frames form-fit any shape face comfortably. Flanged n bridge fills the gaps around the nose to assure greater prot tion. Adjustable, elastic headband holds goggles in positi

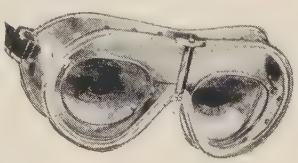
SOFT VINYL
Black Frame



WELDING GOGGLE Model 492

Large opaque black vinyl frame form-fits the face. Stac-Vent provides light-tight ventilation. Removable lens holder holds replaceable standard 50 mm round, Federal Specifications, welding filters—shades 3, 4, 5, or 6 available. Glass filters protected inside and outside by acetate cover lenses.

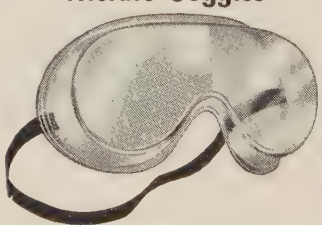
RIGID FRAME



COVER GOGGLE Model 7

Molded curved cover goggles are available in two sizes, medium and large. They fit over most rimless and metal frame glasses. Frames are supplied in a choice of crystal, green or black. Replaceable methacrylate lenses available in clear (C), light green (G2), medium green (G4) and dark green (G6).

ONE PIECE
Acetate Goggles



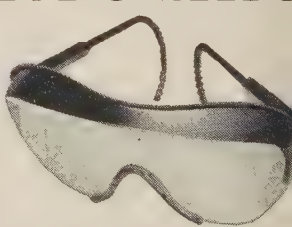
CHEEPEE Model 99

Low cost one-piece acetate goggle . . . optically perfect, close fitting and lightweight.

D-LUX Model 100

One piece, acetate goggle fits over most prescription glasses. Optically perfect with full all around vision . . . no distortion. Both models available in clear and medium green.

EYE SHIELDS



METHASPEC Model 55

Low cost Methaspec Eye Shiel are the ideal visitors' protectio The lens and visor are mold in one piece, formed of guara teed optically perfect .08 thick methacrylate in clear (with black painted visor, lig green (G-2) and medium gre (G-4). Retrax temples and le angle device permit easy adju ment to fit comfortably.

Quality Eye Protective Equipment *Made by the Leaders in Plastics*

WATCHEMOKET OPTICAL CO., INC.

238 West Exchange St. PROVIDENCE 3, R. I. In Canada: Lovitt Safety Limited, Toronto 10, Montreal 26

SAFETY SPECTACLES

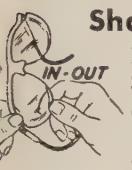
FOR LIGHT WEIGHT AND COMFORT

WATCHEMOKET eye SAVERS

Featherlight" TUC-AWAY

r 90% Protection Worn All the Time

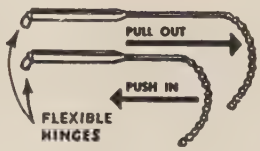
odel 415 — plastic retrax temples (illustrated)
odel 412 — metal retrax temples
odel 410 — plastic club temples



Shatterproof Methacrylate Lenses

Replaceable — Interchangeable — Eye Savers "Tuc-Away" lenses are plano, optically perfect, .080" thick for safe, impact protection; will not shatter or pit. They provide full, clear vision with side shield protection or cup type side and bottom protection. Available in ar, green and gold shades.

onomical . . . initial cost is low, maintenance is eliminated, placement lens cost is low. It pays to have 90% protection 0% of the time instead of 100% protection only 50% the time.



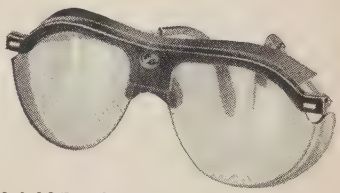
Adjustable Retrax Temples — Plastic or metal Retrax Temples telescope in and out to provide proper head fit. Universal Nose Bridge assures comfort and eliminates need for extra stock sizes. One size fits all.

SPECIFY LENS TYPE AND COLOR BY CODE NUMBER

Type Lens	*Clear*	*Light Green*	*Medium Green*	*Dark Green*	*Gold*
Regular Side Shield	CSS	G2SS	G4SS	.....	YSS
Full 1" Side Shield	CSSF	G2SSF	G4SSF	G6SSF	YSSF
Quarter-Cup Shield	CQC	G2QC	G4QC	.....	YQC
Semi-Cup Shield	CSC	G2SC	G4SC	G6SC	YSC
Full-Cup Shield	CFC	G2FC	G4FC	G6FC	YFC

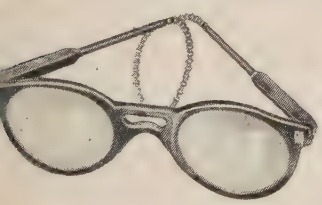
VISOR-TUC

The Visor-Tuc with over eyes "VISOR" provides almost 100% protection with comfort. Visor fits snugly against the forehead. All lenses are interchangeable in Tuc-Away.



Model 425—plastic retrax temples
Model 422—metal retrax temples (illustrated)
Model 420—plastic club temples

PLIT-JOINT



FRAME ONLY Model 80

urnished for prescription use ith standard 47 mm P-3 shape nses. Lenses not furnished.

FRAME WITH PLANO Model 80 MS

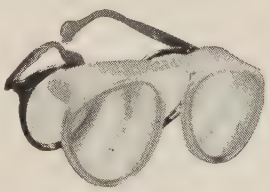
afety spectacles with optically erfect, curved, methacrylate nses, .080" thick, clear (MSC), ght green (MSG2), medium reen (MSG4).

SIDE SHIELDS

SNAP-ON SHIELDS Model 115

Extra side protection with prescription safety spectacles can be obtained by snapping on these deep cup acetate side shields. Will fit on all sizes of safety frames. Available in clear (AC) or medium green (AG). These eye shields are easy to attach and remove, thanks to nickel silver clip-holders which hold them in place.

CLIP-ONS



TUC-OVER
MODEL 175 Medium
MODEL 176 Large

Featherlight Tuc-Overs are all plastic with integral visor protection. Replaceable, optically perfect lenses are shatterproof, curved methacrylate .080" thick, available in clear (C) light green (G-2) and medium green (G-4). Frames are available in a choice of translucent white or green in medium or large.

EXECUTIVE

SAFETY SPECTACLE
Model 595 Metal Retrax
Model 590 Club Temple

Handsome, lightweight frame curved to fit forehead and give maximum protection without side shields. Optically perfect, curved methacrylate lenses easily snap-in, snap-out.

SC1—Clear lenses for safety.
SC2—Light green lenses.
SG4—Medium green lenses.
SY1—Gold lenses.
Furnished with protective case.

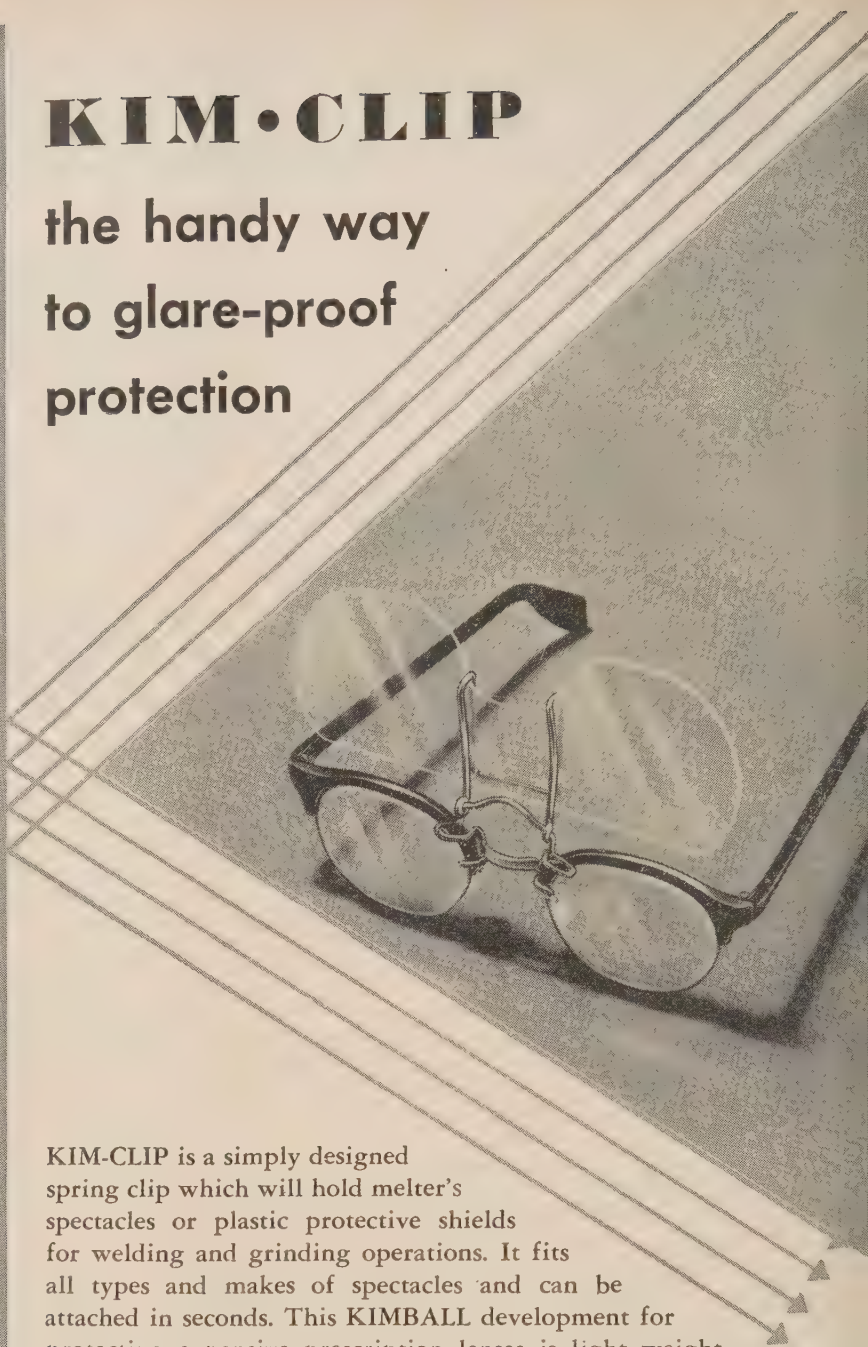
Quality Eye Protective Equipment *Made by the Leaders in Plastics*

WATCHEMOKET OPTICAL CO., INC.
238 West Exchange St. PROVIDENCE 3, R. I.
In Canada: Levitt-Safety Limited, Toronto 10, Montreal 26

KIM•CLIP

the handy way to glare-proof protection

Note that KIM-CLIP is adjustable to three definite positions. Just flip the glare-proof protective shields to the desired position. No need for two pair of safety spectacles when you have a KIM-CLIP.



KIM-CLIP is a simply designed spring clip which will hold melter's spectacles or plastic protective shields for welding and grinding operations. It fits all types and makes of spectacles and can be attached in seconds. This KIMBALL development for protecting expensive prescription lenses is light weight, convenient, practical and inexpensive. KIM-CLIP affords complete glare-proof comfort with safety. The plastic protective shields are available either clear or tinted.

OTHER KIMBALL SAFETY PRODUCTS . . .

EYE PROTECTION: Spectacle Goggles, Welding Goggles, Composition Goggles, Sideshields.

HAND PROTECTION: GLOVES: Welder's, Asbestos, Steel Stitched. MITTENS: Welder's, Asbestos, Steel Stitched.

BODY PROTECTION: CLOTHING: Wool, Flameproofed Cotton. LEGGINS and SPATS: Leather, Asbestos, Flameproofed Cotton. APRONS: Leather, Asbestos, Flameproofed Cotton.

Kimball SAFETY PRODUCTS COMPANY

9310 Wade Park Avenue • Cleveland 6, Ohio

(For details, use Key # K-16 on card on page 85)

The High Cost of Horseplay

A Few Laughs—A Few Lives

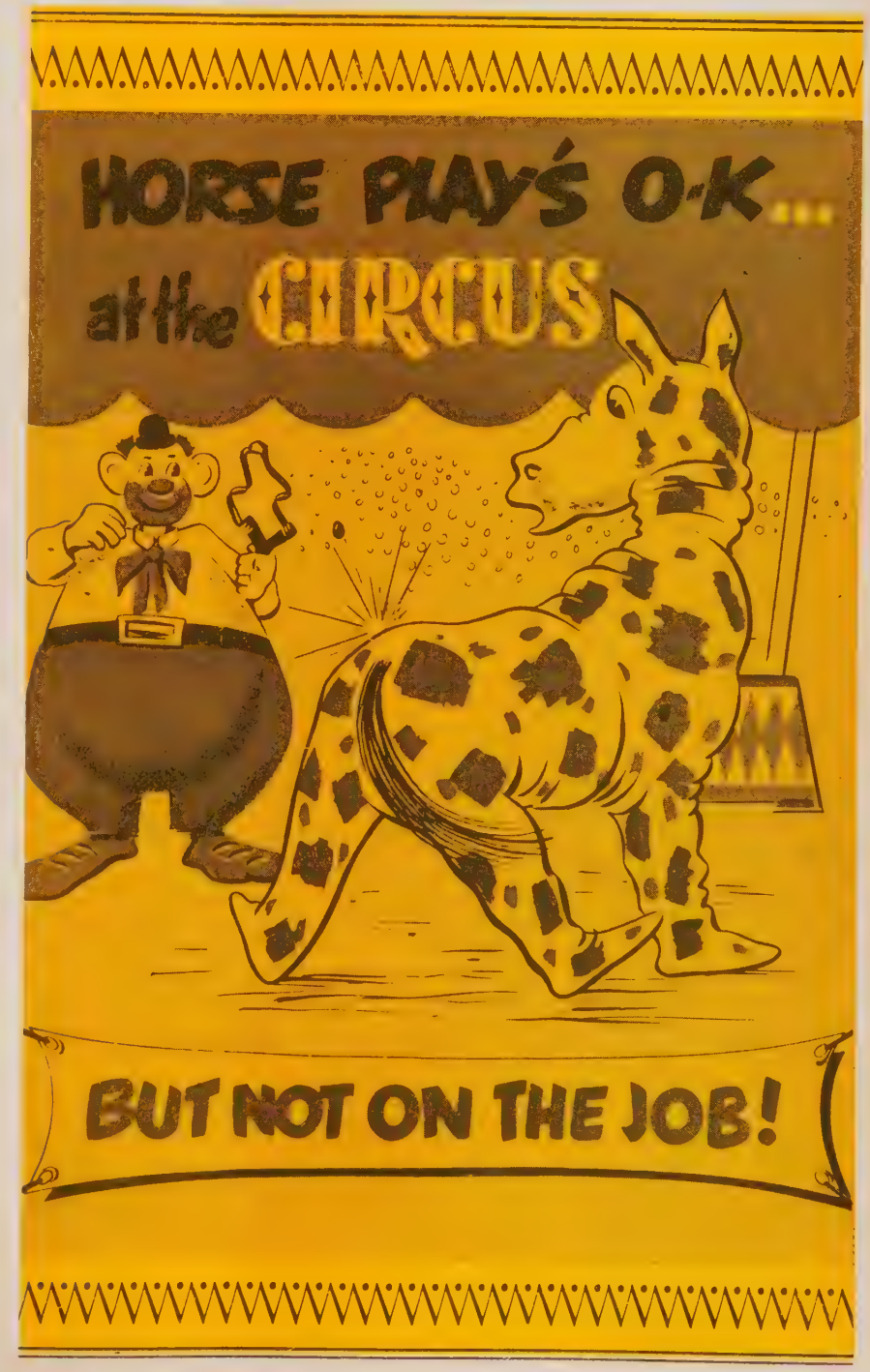
Fun is fun, but it's no laughing matter in an industrial plant. Last year, American industry unwillingly anted up some 15 million dollars and American labor paid with more than 15 thousand deaths and injuries because, in plants throughout the nation, there was an inevitable "comedian" in the crowd, according to estimates of the National Safety Council.

In recent years, enlightened industry and responsible labor have joined forces and spent considerable time and money to be sure that every available protection and safety device guards the American workman on the job. It has been difficult, however, to control the human factor—the fun-loving factory hand—the Glue Works Gleason or the Bottling Plant Berle, whose addlepated antics have brought disaster on himself and his coworkers and disrupted production schedules in the process.

Assembly line comics have done everything from tossing a live cat at a fellow worker to administering a fatal hot-foot, with a resultant loss of more than one million man hours to American industry in 1954.

"Pushers" and "throwers" are the chief miscreants among horseplay practitioners. "Pushers" are funny fellows who sneak up behind a coworker and give him a playful shove or prod. Usually, the victim is one who has previously demonstrated his or her extreme distaste for this kind of body contact, and who reacts violently to it.

The most dangerous kind of "pusher" is the character who thinks a compressed air-hose is a jester's toy. This industrial equipment has proved to be a deadly weapon or



an instrument of torture in the hands of a practical joker. In one incident, a man "goosed" with an airline hose lost seven inches of his lower bowel and narrowly escaped with his life after agonizing hospitalization.

"I just wanted to have some fun," the jokester lamely told his shocked buddies. The truth is, many of them had themselves participated in similar "hazing" of other employees.

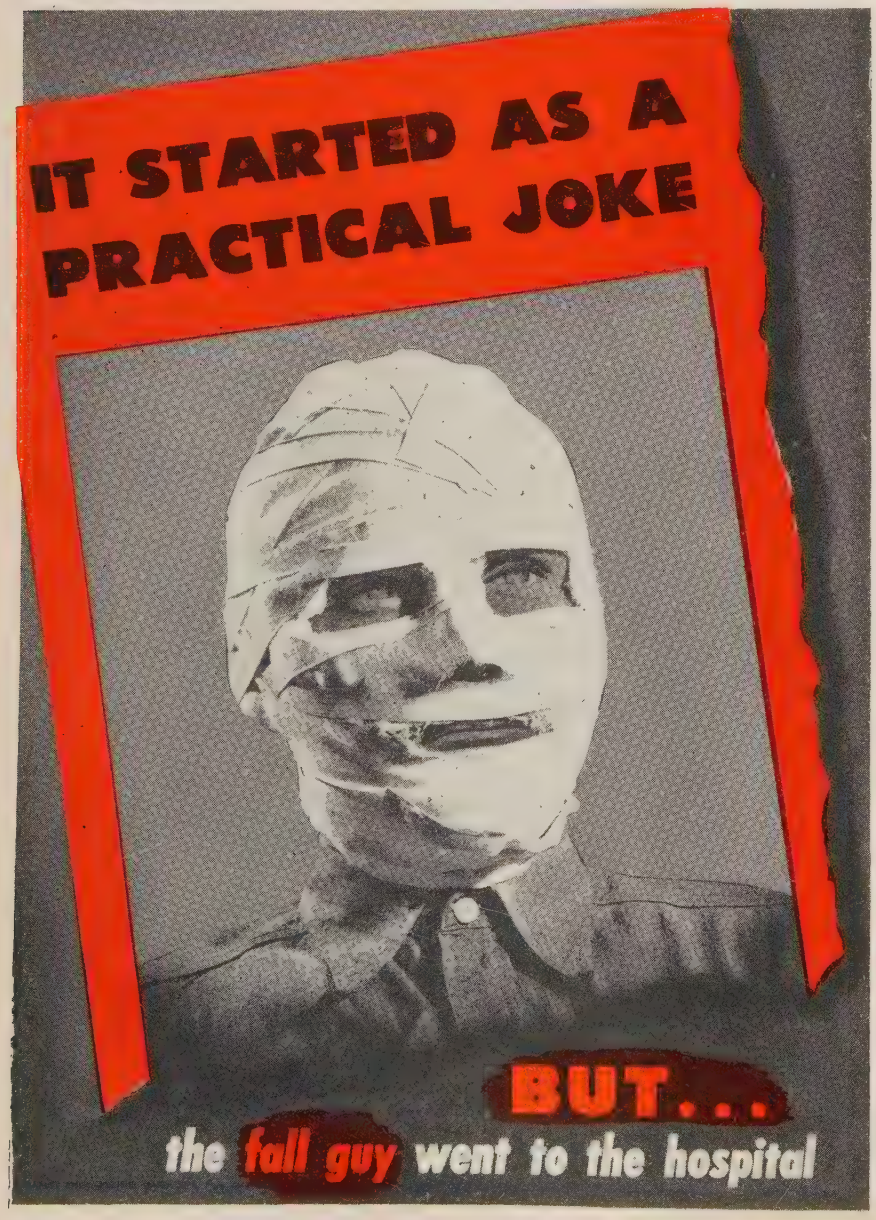
"Throwers" are assembly line comics who wad up a piece of paper, shavings, cotton batting or waste material and toss it at a fellow worker. The other fellow or girl is either surprised by the sudden missile or makes a college-try lunge for it. Both reactions can have disastrous consequences near moving machinery, in addition to being wastefully time-consuming.

Jungle Antics

"Throwers" often hurl the strangest objects. Recently, in one industrial plant, a man reported to the dispensary with an ugly series of severe lacerations on his chest and stomach.

"Looks like you tangled with a tiger," said the nurse as she ministered to the injured man. She was closer to the truth than she dreamed. The victim, who had finished work for the day and was standing stark naked in front of his locker after showering, was suddenly struck by a furry ball of spitting, snarling, clawing fury which landed on his chest. It seems a worker with a perverted sense of humor or a strong streak of sadism in his makeup had spotted a stray cat in the locker room. He picked it up and hurled it blindly over the top of his locker. Had the startled feline landed on the face of the victim he might have lost the sight of one or both of his eyes.

There have been numerous cases where fatalities have resulted from playful hurling of flammable fluids. In one recent instance, two men were killed by an apparent explosion in a gas-driven machine. Investigation brought out that a worker had tossed the gasoline in a sudden clownish gesture. Two of his fellow workers "got the joke" but lost their lives. The man was charged with manslaughter and now has plenty of time to ponder over the tragic consequences of his misplaced humor.



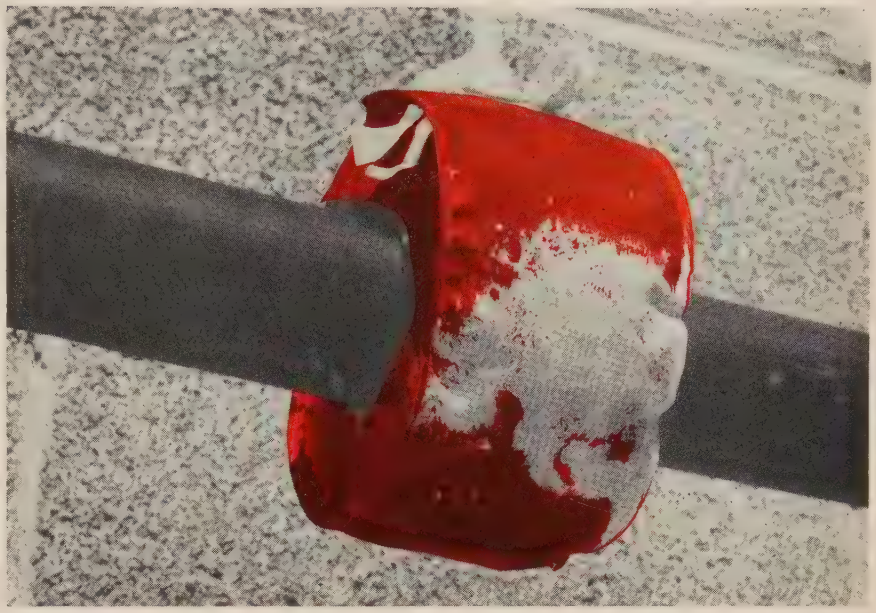
Squirting of water is a common cause of accidents in industrial plants. Most frequent victims are employees who are temporarily blinded, who forget safety regulations in frantic efforts to avoid getting wet, or who slip on wet floors. There have even been cases where employees have dropped bags of water on workers stationed at lower levels. In one recent near-accident a rigger, standing on a crane runway was struck on the head by a bag of water dropped from steel work above. The victim's glasses were broken and he just managed to save himself from falling off the crane runway.

Another "freak" accident involving a flying missile occurred in a factory locker room. A worker flung open the door of his locker, to which some jokester had previously tied an empty bottle. The cord snapped and the bottle was flung nine lockers down the line. A man dressing there heard the crash of the bottle and jumped to avoid it. Instead, he landed barefoot on the broken glass and was so severely gashed that a tourniquet had to be applied before he could safely be carried to the first-aid station, where the attention of a surgeon was required to sew up his wounds.

If it need be repeated that "liquor and gasoline do not mix" here is a recent grisly example. An odd-jobs boy in a garage was sent out by

(Continued on page 50)

Safety Cover Signals Leaks



Chemically-sensitive cover turns from red to white when valve which it protects springs leak. Cover is strong enough to check sudden spurt of liquid and turn it toward floor. Ease of discovering leak promotes safety.

by **ARTHUR B. TOFT**

As with so many "potential risk" occupations, personnel in chemical manufacturing and its related industries too frequently become indifferent to possible danger. Ever-present hazards inherent in the operation of chemical-carrying pipelines have long been acknowledged by safety officers and maintenance inspectors; but until recently, worker apathy and the high cost of shielding personnel and equipment from the danger of sudden leaks has inhibited the use of adequate safeguards.

Now, the marketing of a light-weight, insurance-company approved, indicating valve and flange cover * has largely eliminated the excuse for unguarded pipes.

The likeliest place for a leak to occur is around a valve or in a connecting flange, from which a harmful jet of chemical can, and frequently does, cause accidents and work stoppage that send production costs up and production itself, down.

For many years, it has been accepted practice to reduce the risk of unexpected faults in pipelines by enclosing the "weak" points of valve and flange with a covering of lead. But lead is heavy, costly and expensive to install, therefore, too many pipeline trouble-makers are left completely uncovered.

There has also been the problem of the various valve and flange covers themselves, for in shielding a leak they also conceal a leak. A fault in the line may go unnoticed until heavy corrosion causes a maintenance problem that means downtime, costly repairs and loss of production.

What was needed was a cover that was light-weight, easy to install, but which could give maximum protection without the penalties of corrosion. Such a device has now been developed, tested, approved, and already successfully marketed. This new valve and flange cover is made from especially suitable lightweight material, shaped to fit standard pipeline equipment, and can be attached by anyone in seconds. It is held securely in place by strong, easily accessible tapes.

The shape of the cover itself, which leaves the valve handle conveniently exposed, and the most suitable material to use were questions that were relatively simple to answer. Both solutions ensured safety for personnel and an economical method of guarding against unheralded pipeline defects. But the problem of spotting the leak before it could cause extensive damage, was a different matter.

The Warning

After years of experimentation a reliable and fast method of revealing the leak has been perfected. With the new cover, a dramatic warning plays up the fault so effectively that it is literally a safety and maintenance report on itself.

The importance of this new device lies in the fact that the material from which it is made incorporates an agent that changes color when struck by leaking chemicals. With the cover in place, a stream of leaking chemical from a defective valve or flange, will strike the specially treated material and right away begin to activate the color-change "warning."

This change in color is not merely a slight lightening or darkening of the material, but a vivid, bright contrast that is immediately apparent to anyone in the vicinity. It can be spotted at a glance. Once the men have been alerted to report this obvious signal, it has the effect of placing all personnel on the safety and maintenance teams.

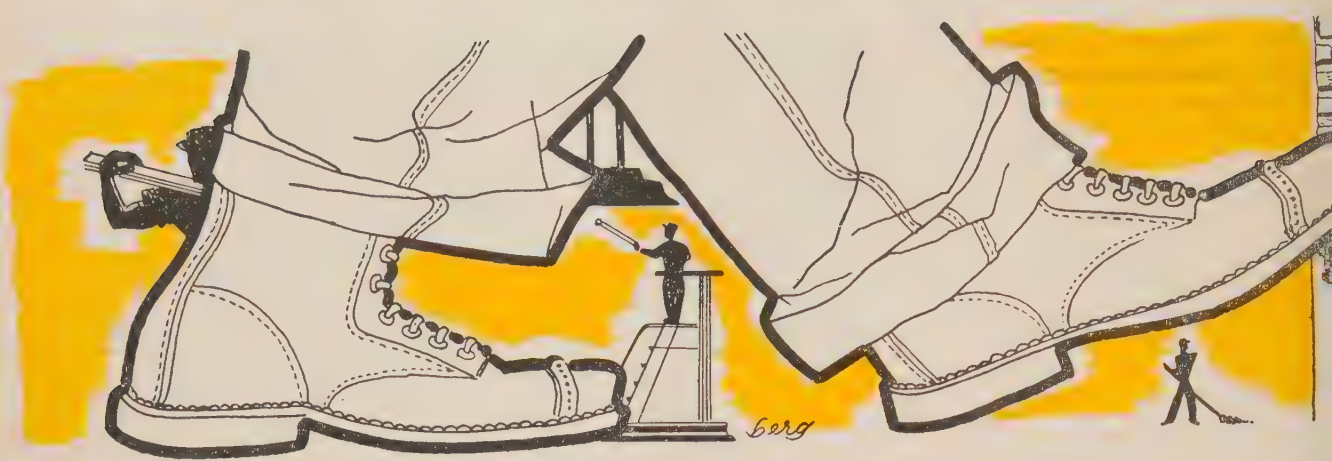
A very small leak is sufficient to begin the color-changing process in the new cover so that it "speaks up" quickly and efficiently, giving the maintenance crew a chance to get on the job while the leak is still a "weep." And the fact that the cover remains unaffected by fumes, means that it doesn't cry "wolf." The cover also prevents a violent leak from jetting out onto the workers and equipment.

The new cover can be stored easily, packs flat and is sufficiently economical so that a plant can be equipped for a fraction of the cost of old protection methods.

Pictures by courtesy of Neirad Industries, Inc.

* Further details concerning this device may be obtained on inquiry to the Editor.

Take a Big Step Toward



The 8 Important Jobs of Plant Maintenance

1. Inspect plant and equipment frequently enough to detect wear and tear, misadjustment and impending breakdowns before there are spoiled products, serious damage, or delays.
2. Perform such servicing, adjustments, repairs, and replacements as inspection shows to be necessary.
3. Make emergency repairs.
4. Keep systematic records on the plant, equipment, and on inspections, servicing, adjustments, repairs and replacements which have been completed.
5. Keep "follow-up" records to assure suitable future periodic re-inspections.
6. Suggest and assist in developing improvements in machinery and equipment to decrease the chances of breakdown and the necessity for frequent adjustments or repairs.
7. Suggest and assist in developing better methods of performing maintenance work to decrease costs.
8. Perform other service jobs, such as assisting in the installation of new equipment.

IN THE LONG RUN, effective plant maintenance does not cost you money—it saves you money. These savings result from lowered factory burden charges; for example, it is clearly worthwhile to put $2.50 into maintenance work now, when it will help you avoid a $250 replacement bill later on.

A well-run maintenance program will also pay off in terms of better worker morale, less non-productive time, and in the end, higher plant productivity. That pay-off is possible because maintenance will help you to anticipate and prevent interruptions in operations and costly loss of output from accidents, machinery and equipment which is in bad condition or broken down, and from poor housekeeping. The net result is that your unit costs will go down.

In large plants, maintenance is usually conducted by a separate department organized on a full-time basis to carry out this work. In small plants, however, the same functions can be consolidated with inspection, production, or engineering duties. Nevertheless, it is important for even the smallest plant operator to make sure that all those individual functions have been recognized and accounted for, and that continuous and economical maintenance operations have been assured.

Plant maintenance functions can be divided into two general groups: preventive functions, which are concerned with anticipating trouble; and corrective functions which are concerned with repairing trouble which has already occurred.

Setting limits on the responsibility and work in maintenance is a policy matter. It is therefore a decision for the chief operating executive to make. Some companies turn over to their maintenance people most non-production engineering jobs. Other plants, however, hire outside specialists to do this sort of work. In most cases, the choice rests on the important factors of relative cost and quality of work. Whichever way the decision is made, everybody concerned should be informed as to: exactly what the maintenance jobs are; who is to do them; and when they are to be done.

Very probably, you will not have a completely separate maintenance staff. Most small plants don't. But it is important to make sure that you have all of the following duties clearly assigned to someone, and that they are regularly and carefully carried out.

Maintenance operations should include: inspection, engineering, production, clerical and housekeeping duties.

Inspection means making routine checks throughout the plant to keep track of the condition and care of buildings, machines, equipment, and other facilities. It also involves indicating needed repairs,

Better Maintenance in the Small Plant

by **EDWARD L. ANTHONY**
Business Specialist
Managerial Assistance Division
Small Business Administration

adjustments, and replacements, and recommending any improvements which should be made.

Maintenance inspections should be regularly scheduled and methodically conducted. Specific instructions should also be issued indicating: what is to be inspected; the nature of the inspection; and what, if any, servicing, adjustments, or minor repairs and replacements are to be made at the time of inspection.

Inspection reports should show precisely what repairs are necessary and what the cost of such repairs is estimated to be. You will be able to use these reports in connection with follow-ups on the next regular inspection to make sure that the necessary work has been done and that results are good.

Engineering means designing changes and improvements in plant, machinery or equipment and doing other developmental work.

For example, in one small plant a recurring difficulty developed in keeping a certain machine properly secured to its mountings. The maintenance people determined that the problem lay partly in the vibration from the machine's power source and partly in the construction of the mountings. To correct the situation they designed a stronger internal bracing arrangement and adopted a heavier combination of bolts and brackets for mounting.

Similarly, many a maintenance man has rigged up special lighting fixtures to meet the problems of unusual angles or sizes which make standard equipment unsatisfactory, or to fill a need for multiple outlets which stock items can't match.

Production means putting into effect ideas developed in the engineering phase of maintenance, carrying out work assigned as the result of inspection, and performing routine adjustments and servicing such as lubricating. It is the branch of maintenance work which actually gets things done and keeps the plant in order. For that reason, it is usually the best understood and most commonly thought of aspect of maintenance in small plant operations. It is also the area in which the largest savings in overhead costs can be made.

Breakdowns of machinery and equipment will sometimes occur despite everything you do to prevent them. Each problem of this kind falls in the production area of maintenance, but each must be dealt with according to the best judgment of the responsible executive. In deciding what is to be done in such cases, you should consider the origin and cause of the breakdown, the nature of the necessary repairs, and the possibility of taking particular steps to prevent recurrence. All special or emergency repairs should be recorded in the same way as are routine repairs and replacements.

You can supervise and control the routine work of servicing and of making adjustments, repairs, and replacements in much the same way as you regulate your production operations. A simple set of forms, like those used in production planning and scheduling, can be adapted to show at all times the jobs which are completed, those being worked on, and those still pending.

You will find it useful also to have storage facilities which carry in stock those parts which experience shows must be frequently replaced and which do not require an unreasonably large investment in inventory, or those which cannot be obtained from a local distributor on very short notice. Among these items may be: Electric lamps, electrical fittings, pipe fittings, washers, bearings, bolts, nuts, screws, and the like.

Repair and replacement work must be done in accordance with local building codes. It must also be in keeping with state laws, insurance rules, and regulations for safeguarding workers, machinery, equipment, and buildings.

(Continued on the next page)

Clerical generally means keeping records. To be sure, there may be numerous kinds of records, such as follow-ups, timekeeping, budgeting, costing, and reports of progress. Individually, however, they do not have to be complicated. Most of the clerical work has to be "tailored" to your particular plant situation, just as you must decide in the light of experience and needs what records and reports you want and when you want them.

There are, in addition, certain maintenance records which almost any small plant operator should keep permanently. They cover all important features of your plant and all important details of your maintenance operations. Here are 10 which you should have readily available and constantly up to date:

1. Property maps
2. Complete sets of building drawings
3. Complete sets of power line drawings
4. Maps of underground piping
5. Factory piping maps, including heat, steam, water (hot and cold, service and drinking) and fire equipment (sprinkler systems, hose connections, hydrants, and so forth)
6. Layout of shop transportation facilities
7. Perpetual inventories of machinery and equipment
8. Drawings and specifications of machinery and equipment with lists of parts for ordering replacements
9. Records of inspections, adjustments, repairs, replacements, and their costs
10. Machine and tool layouts

Housekeeping means taking care of the details of upkeep, cleaning, and keeping in good condition the tools, equipment, and facilities in the plant. Here is a checklist which you can apply to your own situation:

Floors

1. Is damaged flooring repaired immediately?
2. Are trash baskets for papers, candy wrappers and the like, placed at convenient locations?
3. Is the danger of throwing scrap and other material on floors and platforms impressed constantly upon workers?
4. Are floors vacuum-cleaned or swept daily; or if necessary, more than once a day?
5. Would a non-slip floor coating significantly reduce slipping hazards?
6. Do you need an exhaust system to remove dust, sawdust, or wood shavings?
7. Are oil and grease spots taken care of immediately?
8. When greasy, oily parts are removed from machines are they placed on paper or sawdust, rather than directly on the floor?
9. Is the floor kept wet and slippery in spots by oil drips, or water leaks? If so, have you tried to eliminate the cause by having repairs made, by installing drip pans, and splash guards, or by improving your present pans and guards?

Work Areas

10. Where possible, are chips, shavings, and other refuse collected in containers as they are produced rather than allowed to fall on the floor?
11. Is there sufficient space around machines, benches, and other equipment for safe, uncrowded work?
12. Are work areas clearly marked off with painted lines?
13. Are machines, benches, tables, and other items of equipment arranged in an orderly manner?
14. Do workers have racks or other holders in which to keep tools and parts?
15. Have you a tool check-out system to assure prompt return and better care of tools?
16. Do you schedule production carefully so that there is no need for unusually large amounts of work-in-process or finished items in work areas at any one time?
17. Have you instructed workers in drawing the correct amounts of needed materials and supplies to avoid cluttering work areas?
18. Are excess materials returned promptly to the storeroom?
19. Do you provide suitable tote boxes, trucks, or other transportation equipment for moving work-in-process?
20. Is work-in-process moved up promptly to the next operation?
21. Are separate containers provided to avoid mixing up salvable scrap and waste?
22. Are the containers emptied regularly?
23. Is scrap salvaged—either reprocessed, or sold—regularly?

Machines

24. Are machines lubricated at the correct points and with the correct amounts and kinds of lubricants?
25. Are chips, shavings, or other scrap wiped off machines frequently during the day and dirt and grease removed regularly?
26. Should your machines and other pieces of equipment be painted to help keep them clean, prolong their life, and aid in lighting?

Storage Areas and Stacking

27. Do you provide adequate, clearly marked storage areas for: incoming materials, work-in-process, finished goods, supplies, tools, and spare parts?
28. In stacking material, is consideration given to the strength of the floor, possibility of toppling, and interference with work areas?
29. Are racks used for safe storage of pipe or other long stock?
30. Are small articles kept in suitable containers?
31. In storerooms, are areas marked off for items which must be kept on the floor?
32. Are lower bins saved for heavier items?
33. Are smaller items arranged neatly on shelves or in bins?

Aisles

34. Are aisles kept sufficiently wide to permit efficient flow of traffic?
35. Are aisles clearly marked with painted lines?
36. Are aisles kept free of materials, work-in-process, and finished items?
37. Is care taken not to have ends of piled materials jutting out into the aisles?

Stairways and Exits

38. Are stairways well-lighted?
39. Are elevators kept clean and well-lighted?
40. Are exits clearly designated? Are door latches and hinges kept in working order?

41. Are stairways and exits kept free of obstructions?
42. Are stairways kept clean and in good repair?
43. Are there secure hand-rails?

Fire Hazards and Fire-fighting Equipment

44. Are rubbish, oil-soaked cloths and other flammable materials placed in metal cans which are emptied daily (or do they accumulate in corners, lockers, and under benches and stairways, causing fire hazards)?
45. Do you store flammable or explosive materials in safe, easily-identified containers?
46. Are fire extinguishers, hoses, fire pails, and other fire-fighting equipment kept clear of obstructions?
47. Is the equipment checked and tested regularly and kept in working condition at all times?
48. Is piled material kept well below sprinkler heads?

Plant Lighting

49. Have you a regular schedule for washing windows and skylights?
50. Does your plant have adequate, modern lighting?
51. Are lamps, fixtures, and reflectors cleaned periodically, and burned-out lamps replaced promptly?
52. Are walls and ceilings painted a color which reflects natural and artificial light, but does not cause glare?
53. Are walls and ceilings cleaned regularly?
54. Are they repainted when cleaning no longer restores their reflecting value?

Employee Facilities

55. Are toilet and washroom facilities adequate?
56. Are convenient, cold water drinking fountains available for all employees?
57. Are the facilities kept clean, sanitary, and well-lighted?
58. Are workers urged to help keep them clean and neat?
59. Do workers have a suitable, clean place, away from machines, in which to eat?
60. Are lockers provided for workers' clothing and belongings?

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C-35

Can You Use: A Comprehensiv

by **HENRY G. DESJARDINS**

PERSONAL respiratory protection from atmospheric contamination is afforded either by exhausting the impure air a person inhales in the atmosphere around him, or by supplying him with respirable air from a source independent of his working environment. It is generally agreed that in exposure to dusts, mists, fumes, vapor or gases, protective procedures should primarily prevent contamination of air in the breathing zone. However, idealistic as one may wish to be in the application of these procedures, there will always be situations where for one reason or another they will be inapplicable, impractical or not adequately effective. In such situations, respirators should be regarded either as a primary means or as an adjunct or supplement to other prevention procedures.

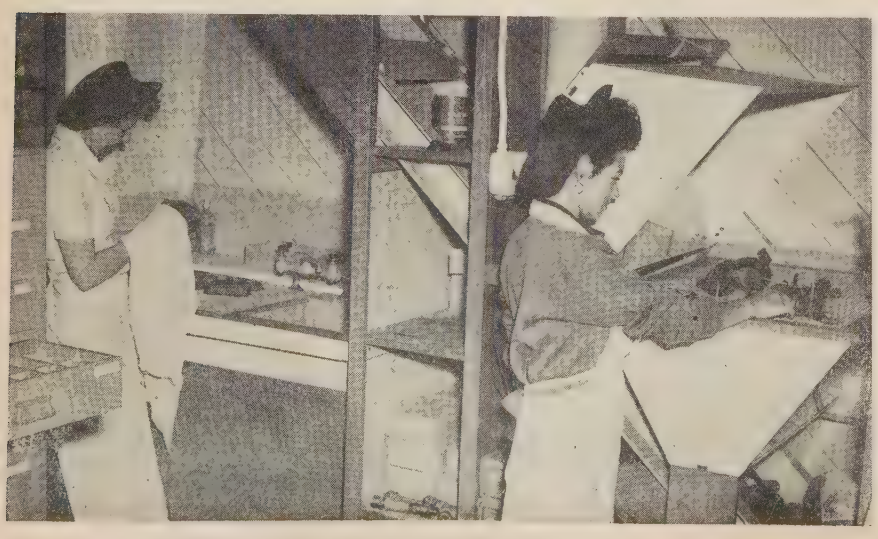
Respirators, by definition, are any device for rendering inhaled air respirable. The terms "respirators" or "respiratory protective devices" refer to a large and varied group of protectors worn on the face over the head of the worker and designed to decrease or eliminate the amount of contaminants (dust fumes, mists, gases or vapors) in the air he actually takes into his lungs. However, the use and connotation of the word "respirators" have become more or less specialized and to a considerable extent variable. For uniformity in naming the various devices that appear on the market and to provide a basis for thorough understanding of their operating principles and uses, I shall classify them as: mechanical filter respirators; cartridge respirators; gas masks; airline respirators; demand masks; and self-generating oxygen breathing apparatus.

Using Respirators

It must be understood that respirators are not a substitute for general dust or gas control, but are a helpful adjunct. They are used extensively on jobs such as abrasive blasting, paint chipping, handling used storage battery plates, cadmium oxide manufacture, welding operations, preparing of paints and glazes, manufacture and use of pigments and dies, and the like. Their most important use is under conditions where protection is required intermittently, as in cleaning out operations, sweeping, after blasting, removing cores from large foundry castings, shoveling, screening and handling of materials, and operation and maintenance of processing equipment.

Respirators should not be considered part of the worker's wearing apparel. They are safety devices and should be supplied by the employer. The employer's responsibility does not end with the purchase of respirators. He must see that they are distributed to all employees who need them. The workers must be instructed when and how to use the respirators—a difficult task which is accomplished only by incessant education. Above all, the employer should provide means for systematic cleaning and sanitizing of personal respiratory protective equipment to promote good hygiene and encourage use of the equipment.

Respirators, as well as other safety equipment, are cleaned and sterilized in this picture.



Classifying Respirators

Mechanical Filter Type—The mechanical filter type of respirator removes by mechanical or physical filtration (with the aid of electrostatic precipitation in some cases) the dusts, fumes, or mists of hygienic significance from the air drawn by the individual's normal inhalation from the surrounding contaminated atmosphere. The usual design of a filter respirator is a half mask facepiece covering the nose and mouth, directly connected to a filtering element such as a disc, pad, bag or cylinder. It may also be a full mask facepiece connected for breathing to a filtering element on the chest, back or even on the head in the form of a cap. The filtering elements are usually constructed from specially selected processed paper, cellulose fiber, mineral wool, cloth or felt materials.

The primary principle of dust removal by mechanical filters appears to be simple physical trapping by fibers in the filter. Air, laden with dust, is passed through mats of fine fibers, criss-crossed to form mesh-like entanglements with exceedingly small tortuous paths in which the harmful matter is trapped by entanglement, impingement and adhesion, by simple screening, or most likely, a combination of these. Electrostatic influences are undoubtedly present in varying degree for the various filtering media.

Guide To

ABOVE—Demonstration board shows respirators broken down into component parts.

BELOW—Self-generating type of breathing apparatus.

Studies of the comparative filtering efficiencies of various filter fabrics have shown that both the filtering efficiency and the resistance to air flow increase with continued passage of dirt-laden air through the filter. This is undoubtedly caused by the build-up of dirt particles, reducing and plugging the paths through the filters. Obviously, the respirator which utilizes simple filtration provides its poorest protection and its lowest resistance to inhalation (greatest breathing comfort) when it is first used. Also, of course, its life period is determined by the time required for plugging to increase the resistance to breathing to a point where it is laborious and uncomfortable.

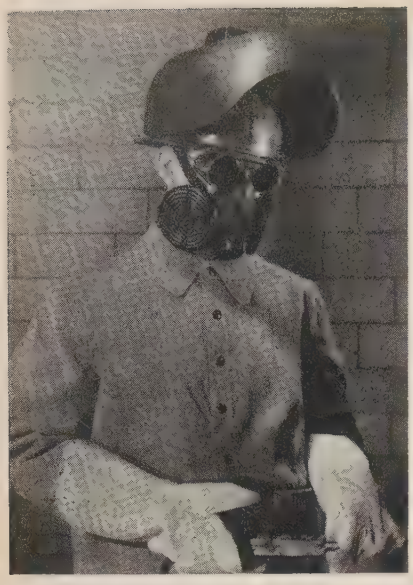
Kinds of Mechanical Filter Respirators

Mechanical filter respirators are sub-classified according to the conventional classification of atmospheric particulate matter, namely, dusts, fumes, and mists. The objective of this subdivision is to provide more suitable filters for the particular kind of matter to be dealt with.

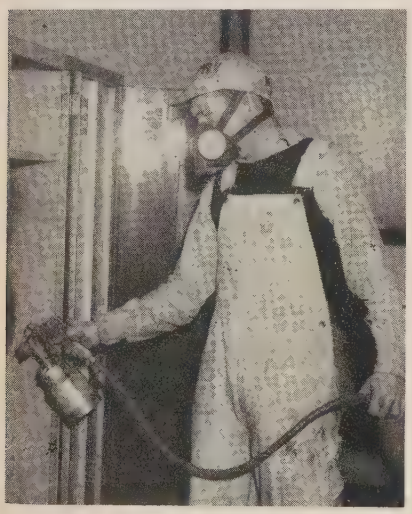
Because of the similarity of design and operation principles, among these 3 classes of respirators, I will present briefly their purpose and summarize their essential features, uses and limitations.

Mechanical filter dust respirators are for mechanically generated dusts resulting primarily from the mechanical disintegration of a solid, such as dust produced in the various processes of mining, construction, and manufacturing, and the various industrial operations, such as drilling, blasting, crushing, grinding, handling, and processing of rock strata and minerals; abrasive grinding; the handling, screening, and use of sand or other pulverized or dusty silicious materials; stone, granite and wood cutting and all similar operations and processes.

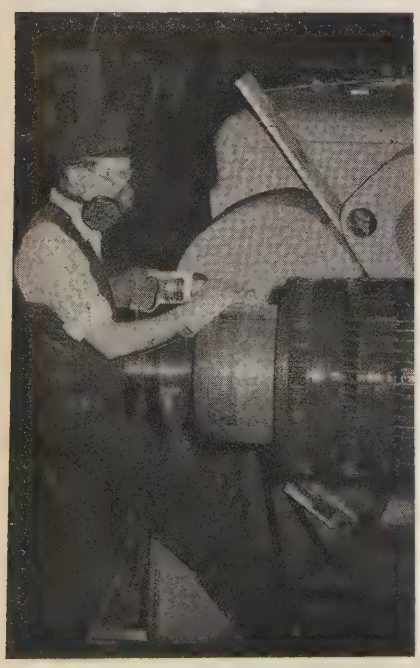
Mechanical filter fume respirators are for protection from fumes of various metals (usually the chem-



Fume respirator is used by welder with other safety equipment in this picture.



Cartridge-type mist respirator in photo above guards user against paint spray.



The well-known dust respirator is used here to guard worker against metal dust.

ical compounds, as oxides or carbonates), such as lead, manganese, copper, chromium, iron, cadmium, zinc, magnesium, aluminum, antimony, and arsenic. These are produced in chemical and metallurgical processes by sublimation or the condensation of the vapor of these substances or from chemical reaction of the vapor and gases. Fumes and smokes may also be formed by thermal decomposition of chemical compounds and the partial or complete combustion of organic metallo compounds and metal hydrides that produce a solid as a product of combustion, such as diethyl selenide (producing selenium dioxide) and lead tetraethyl (producing lead oxide). The many organic compounds of silicon, as tetra methyl silicate, tetraethyl silicate, and the hydrides as silicane, may be used in industry under conditions where they burn and produce a very fine fume of silica.

Owing to their small size when formed, the particles in fumes or smokes are the most difficult class of particulate matter to arrest and require what may be termed, very dense filter fabrics. A compensating factor in some of the fumes is that after formation, they begin to agglomerate and form clusters, which then act as larger particles and become easier to arrest. Zinc oxide fumes in particular behave in this manner.

Mechanical filter mist respirators protect against mists produced by spray-coating with fluid materials, vitreous enamels and silicious glazes, chromic acid mist as produced by chromium plating, and other mists whose liquid component does not liberate harmful gases or vapors in significant quantities. In general, the mists are of a particle size range that equal or exceed the size of dusts and their removal by respirator filters is not more difficult than for dusts. This is particularly true with materials that have a high proportion of soluble or insoluble solid to liquid.

On the other hand, a volatile solvent holding a solid in dilute solution may evaporate from the solid particles as it floats in the air and ultimately reduce them to a size approaching that of the residual solid component. Mists of extremely small particle size can be formed in this way and they are as difficult to filter as fumes or smokes. Many also present a vapor hazard.

Combination mechanical filter respirators are for the removal of two or more of the classes of matter, as dust and mist, dust and fumes, fumes and mist, etc., either singly or simultaneously. They are intended primarily for situations where more than one class of particulate matter is encountered.

Uses and Limitations

If properly maintained and worn, mechanical filter respirators of a quality that will meet the approval requirements and tests of the U. S. Bureau of Mines will give adequate respiratory protection from the contaminating dusts, fumes or mists for which they are designed. However, equipment approvals granted under these test schedules are limited to particulates not significantly more toxic than lead. Respirators of this type are the most convenient and widely used individual protectors from dusts that contain silica. Some examples of this use of filter respirators are: house-cleaning and maintenance work in factories and plants, including blowing dust from machinery; drilling; mucking and transporting rock in mines, tunnels and quarries; handling, packaging, and conveying dusty materials; cutting and polishing stone (especially in small works) and working with stone in place; shaking out castings, grinding castings, sand blast helpers (special supplied air respirators, commonly known as abrasive masks, are to be worn inside blast room during blasting); in agricultural pursuits, when following dust-producing farm implements, threshing soil-contaminated grain; erosion projects, grading and working dry soil; blowing insulation into homes; grinding, mixing and applying silicious glazes; flow sanding, removing plaster, ash handling, cleaning rugs; and grinding and polishing false teeth.

Mechanical filter respirators do not protect from gases and vapors, and they should not be used in situations where an air supplied device is necessary.

(Continued on page 34)

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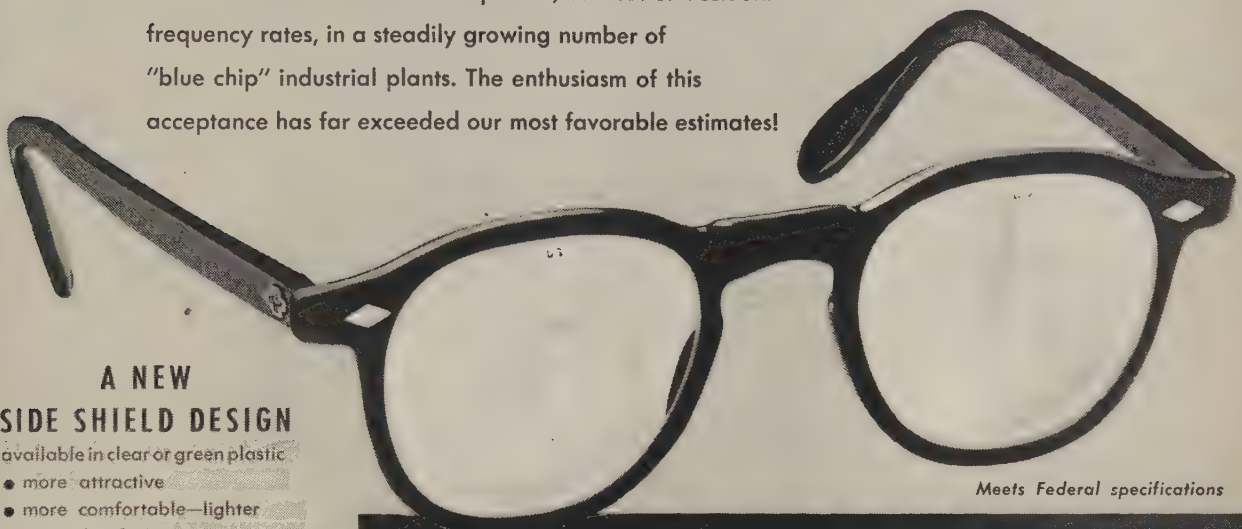

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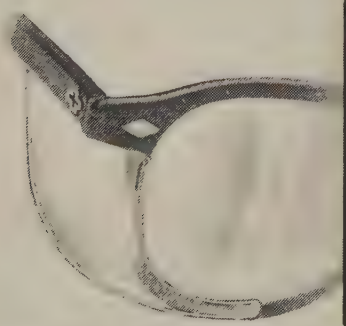

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Respirators

(Continued from page 32)

Chemical cartridge respirators usually consist of a small cartridge-like purifier attached directly to and carried by the facepiece of a half-mask design. However, full mask facepieces with canister attached directly, or merely small canisters with mouthpieces attached and wire clips to close the nose are used rather extensively. Essentially, they are low capacity gas masks designed for giving protection against atmospheres which workmen may breathe without protection but which will either produce discomfort or a chronic type of infection or poison after repeated exposures of several hours daily. Their field of use lies in situations where adequate general ventilation is provided but where there is a need for individual protection against localized contaminants.

A major advantage of the cartridge type respirators as compared with a mask having a full facepiece, breathing tube and canister is better vision, convenience and comfort.

A very common use of chemical cartridge respirators is against volatile solvents given off in operations such as spray coating, dry cleaning, using rubber cements, and using other similar materials that contain volatile organic chemicals. They are also used for protection against low concentrations of certain acid gases—for example, in smelting of sulphide ores and in many chemical processes where small leaks that cause discomfort and possibly harm after prolonged exposures are practically unavoidable.

These chemical respirators do not suffice for general emergency work, although they are an aid in quickly escaping from a contaminated atmosphere. Chemical cartridge respirators are standard equipment for workmen in some industries where leaks of gases such as sulphur dioxide, chlorine or ammonia are common, everyday occurrences. They are used for a wide variety of discomforting operations, such as the peeling of onions in canning factories and for protection against nauseating odors. As mentioned above, chemical cartridge respirators are not emergency devices and cannot be substituted for the canister gas mask.

The gas mask is another respiratory device which has a wide application in gas concentrations in air not exceeding 2 percent by volume, with the exception of ammonia which is 3 percent.

Since this type of canister mask removes only toxic gases, vapors or smoke from the air, it is necessary that sufficient oxygen be present at all times to support life. A second requirement is that the mask be limited to use in atmospheres containing concentrations of gas of not more than 2 percent in air, 3 percent ammonia, or a 2 percent total where more than one class of gases is present.

Toxic gases encountered in industry are classified as organic vapors or acid gases. Ammonia and carbon monoxide are also widely encountered. For the protection from acid gases, organic vapors, and combinations of these two classes there are canisters for specific gases, i.e., chlorine, hydrocyanic and alkaline gases. Where solid and liquids such as dusts, fumes, etc., are encountered, additional filters are placed in the canister.

In order to identify the industrial series of canisters, the canisters are painted a distinctive color:

1. Organic Vapors—Black
2. Acid Gases—White
3. Acid Gases plus organic vapors —Yellow
4. Acid Gases, organic vapors and ammonia—Brown
5. Ammonia—Green

Any of these having additional filters for smoke and dusts are marked with a white or black stripe at the top of the canister. Canisters designed for a specific gas are painted with the identifying color for that gas, with a contrasting color stripe at the bottom of the canister; the one exception being the ammonia canister which has no stripe at the bottom. There are no canisters of the strictly industrial series which afford protection from carbon monoxide gas.

Usually it is more economical to use the industrial type mask where protection is required from only one type of gas such as on process work, around refrigerating plants, chlorinating plants, etc.; but for all-round protection, as required in fire fighting or emergency repairs, where almost anything can be encountered and where it would not be practical to change the canister, there has been developed a mask known as the "All-Service" type.

The All-Service masks protect from all smokes, gases, and fumes including ammonia and carbon monoxide, where concentrations do not exceed the limits given above for canister masks, and where there is sufficient oxygen present to support life.

The latest models of these masks feature a very efficient mechanical filter capable of removing fine particulate matter and chemical dusts. These canisters have several layers of chemicals so that successive types or classes of gases, fumes, and smokes are removed as the air progresses through the canister, emerging in a breathable state.

Since these canisters furnish protection from carbon monoxide gas, they are equipped with a timer which indicates when to change the canister in relation only to carbon monoxide. Some mechanical means is necessary because carbon monoxide cannot be detected by the senses. The timer is set at zero when a new canister is placed on the mask, and the canister is dated in the space provided on the label at that time. The

(Continued on page 37)

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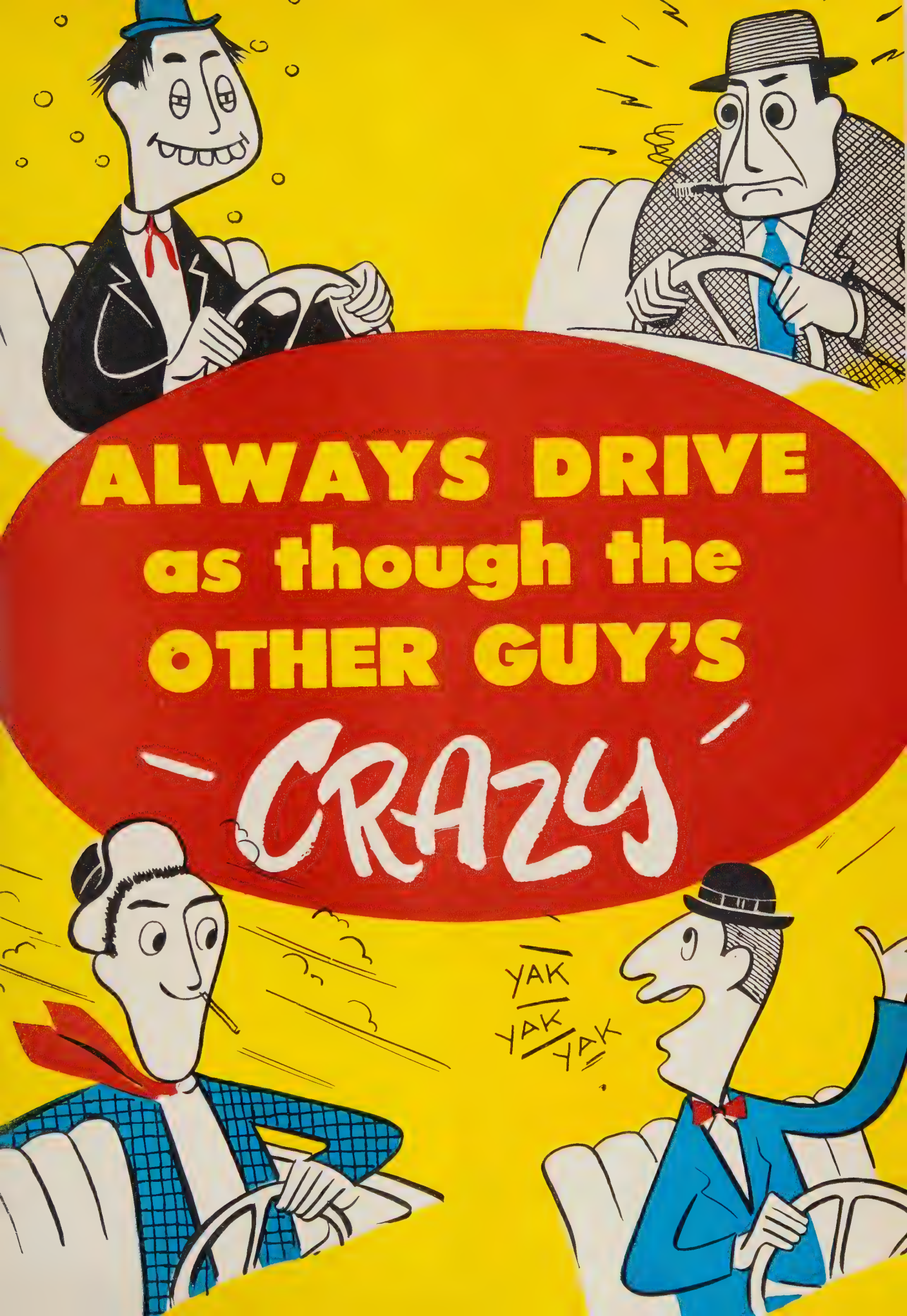
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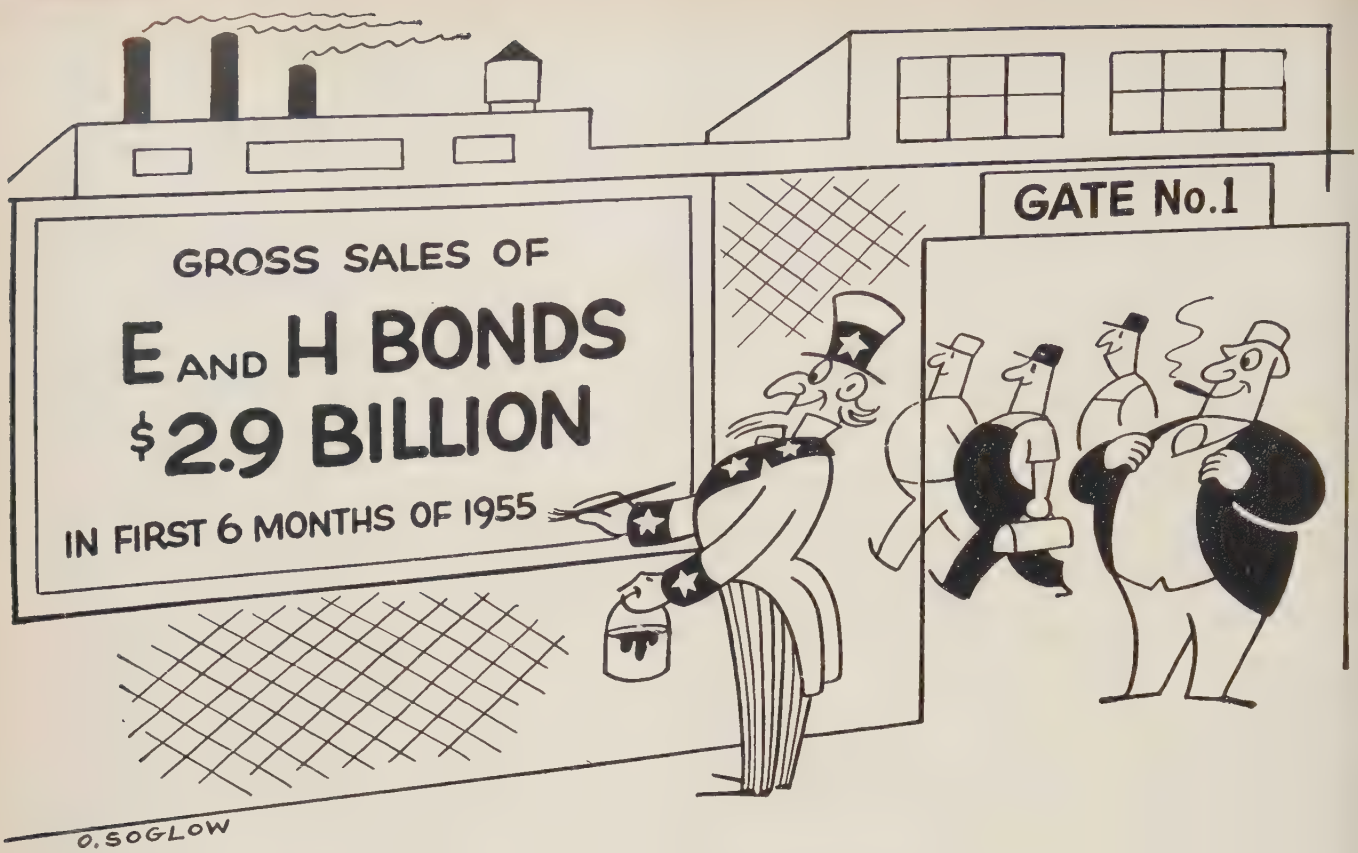

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Safety Maintenance

Respirators

(Continued from page 34)

canister should be changed after the timer has made one complete revolution of the timer dial, which is approximately 2 hours, if detectable gases come through the canister, or one year after the canister has been placed in service as shown by the date, whichever is first.

Canisters should be stored on the shelf with all seals intact in a cool, dry place; and care should be exercised in rotating the stock so that no canisters remain on the shelf for periods of longer than 4 years. After a new canister has been placed on a mask, it is usually recommended that the bottom seal be removed so that the canister is ready for immediate use in an emergency.

The Bureau of Mines is the official testing agency for gas masks (and other respiratory protective devices) and it has set up a schedule whereby gas masks submitted for approval and found to meet the minimum requirements of the Bureau are awarded an approval number. The use of Bureau of Mines approved canister masks is recommended because, to the guarantee of the manufacturer, is added that of the United States Government through its official testing agency.

Airline respirators are supplied with compressed air from an external source so that the worker is independent of the working atmosphere. They are similar to a hose mask in giving protection by conveying respirable air to the wearer, but differ in one important feature. Hose masks allow the wearer to obtain respirable air at liberty by his own effort through a hose of comparatively large diameter, whereas airline respirators maintain the air supply at elevated pressures and convey it through hose lines that are usually comparatively small in diameter. The flow is adjusted to meet the requirements of the person at any instant of inspiration and continues throughout the respiratory circuit. The attachment to the wearer may be a tight-fitting facepiece, a loosely fitting facepiece, or a helmet or hood covering over the head and down to the neck or shoulders.

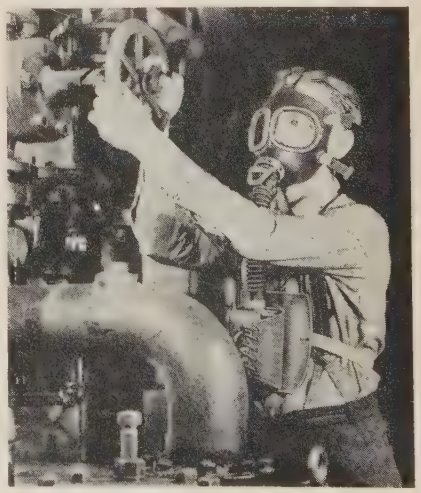
The development of airline respirators has, in the past, been largely an expedient solution to problems of respiratory protection since it provides workmen with means for breathing some of the compressed air they ordinarily used as a source of power in sand blasting, pneumatic drilling, and spray painting—or air from a source of compressed air available in the plant for other applications or processes. Accordingly, this has led to the development of more or less universal types of respirators adaptable to the characteristics of the air supply demanded by industrial processes rather than the respirators. While this type of protection has been a valuable aid in the control of occupational diseases, its use has frequently been accompanied by contamination of the air with objectionable, and, in some instances, harmful substances.

Later air-line respirators have been designed for attachment to air supplies created for respiratory purposes only by blowers or pumps (usually of the rotary water seal type) in which the air does not come in contact with any organic lubricant whose odor, vapor, mist, or products of decomposition are harmful or objectionable. Also, the air is supplied at low pressures, usually 8 to 20 pounds per square inch gauge pressure. The blower may or may not be supplied by the manufacturer of the respirator. If he does not supply this part, he should specify the quantity and pressure requirements of his respirator and, if possible, should designate suitable models and kinds of blowers.

Airline respirators are designed primarily to protect workers from inhaling harmful or objectionable atmospheres that are not immediately dangerous to life, but which may cause immediate illness, a chronic infection, or an occupational disease that may result in incapacitation or death after repeated daily exposure. The ordinary type of device, with half-mask facepiece and small diameter hose through which a person cannot draw enough air by his own inspiratory effort to meet respiratory requirements, is dangerous to use for protection in atmospheres from which the wearer could not escape

Airline respirator is useful where hazardous atmosphere's effect is cumulative.

The demand type mask supplies oxygen or air as required by wearer's breathing.



Gas mask protects man when contaminated air contains sufficient oxygen to support life.

without respiratory protection. The most serious danger is the possibility of failure of the air supply, which would immediately jeopardize the life of the wearer.

If properly constructed, maintained, and operated, air-line respirators will give adequate protection from the inhalation of any atmospheric contaminant. The uses of this device are wide and include any situation where there is a supply of air and the hose line does not present an encumbrance or hazard. They are comfortable to wear for extended periods. Cost of maintenance is low, and they are easy to maintain.

In order to obtain a good quality respirator, and to be sure it will meet the requirements of procurement, inspection is not only desirable but almost necessary. Although the Bureau of Mines approval indicates that it is suitable for the risk upon which the respirator was approved, it does not indicate that the particular purchase is satisfactory. At least one branch of the armed forces requires an inspection for resistance to sterilization, resistance to corrosion, freedom of material from skin irritants, and requires the manufacturer to wear the respirator in a chamber containing toxic or noxious atmospheres to determine whether it is gas-tight, to test for quality of rubber, air tests for metal parts, and to test for filter quality.

The demand mask is worn in fire fighting and industrial emergencies when high gas concentrations or oxygen deficiencies in confined places endanger lives.

The demand mask combines a supply of oxygen or air with a demand regulator and a full-vision facepiece to provide the wearer with a minimum of 30 minutes service under hard physical exertion. The demand regulator responds precisely to varying lung demands, metering the flow of oxygen or air as each inhalation requires. The unit weighs about 32 pounds, is well balanced and comfortable to wear.

The oxygen or air cylinder is supported by a light metal frame which distributes part of the weight to the hips, and the leather harness is well padded at shoulder and waist. The chest strap supports the demand regulator and pressure gauge, which is visible to the wearer at all times. The flexible, corrugated rubber breathing tube connects the demand regulator with the facepiece which features large-area lenses for maximum unobstructed vision. The lenses are prevented from fogging by a direct flow of oxygen or air across their inner surfaces.

Only a few seconds are required for donning the mask. With the harness fastened, the wearer simply opens the cylinder valve, adjusts the facepiece and breathes normally. The demand regulator delivers automatically the proper flow of oxygen or air. In the unlikely event of failure of the automatic demand mechanism, a by-pass valve can be opened to permit a control flow from the cylinder around the demand regulator; excessive flow or pressure is prevented by an orifice of restricted size. For speech between mask wearer and others a speaking diaphragm is available as a unit of the facepiece.

The self-generating oxygen breathing apparatus provides complete respiratory protection in toxic or oxygen-deficient atmospheres for a minimum of 45 minutes, and is approved by the U. S. Bureau of Mines for such use. This apparatus represents an unusual departure in the design of self-contained breathing equipment. In place of the conventional cylinder of compressed oxygen, the apparatus has a chemical canister from which oxygen is generated gradually.

The entire apparatus weighs 13 and a half pounds. A considerable saving in weight is made possible by the absence of an oxygen cylinder and the usual high pressure fittings found on self-contained equipment.

The component parts of the apparatus consist of:

(a) A facepiece assembly, including a facepiece with speaking diaphragm, a valve assembly containing check valves and a pressure relief valve, and two breathing tubes.
(b) A breathing bag, which acts as a reservoir for the oxygen generated from the canister.
(c) The canister, which generates oxygen and removes carbon dioxide from the breathing system.
(d) The plunger assembly, consisting of a plunger which punctures the seal in the neck of the canister, and a plunger casting, through which the exhaled breath is transmitted to the canister, and through which the evolved oxygen is conducted to the breathing bag.
(e) An insulated breast plate and canister frame with attached bail and handwheel for holding canister. The breathing bag is attached to breast plate.
(f) A mechanical timer which rings to indicate the end of the approved 45-minute service life of the canister, or any shorter period selected.
(g) A web harness for wearing the apparatus. This consists of two shoulder straps and a waist strap, all adjustable, and fastened by means of D-rings and snaps. A large D-ring to which a lifeline can be attached is fastened to the harness straps at the point where they intersect across the back.

Any one who may use this type of breathing apparatus must follow the manufacturer's directions and be well trained in the procedure to be followed. Instructions are furnished with each apparatus.

Workmen properly "adjusted" by an educational program will readily accept devices for personal respiratory protection when encountering atmospheres that are markedly discomforting or intolerable to breathe, or for situations which they have seen cause immediate harm or which they definitely understand may do so. There are a few "gaseaters" left but they are rapidly disappearing from accidents, by being too much of a liability to industry, or by being converted to safe practices.

As might be expected, there is more difficulty in securing the proper use of personal respiratory protection for situations in which the harmful atmosphere is tolerable or at least only mildly discomforting. This is especially true where exposure is to a substance such as lead fume, that possesses no sense-perceptive properties other than possible smokiness if conditions are extremely bad. Also, there are no distinct self-observable immediate or accumulative effects on health until serious damage has been done.

(Continued on page 74)

Reinforced Protection

where it's needed most—in the DANGER ZONE

. . . an exclusive M·S·A SKULLGARD feature

The dotted line around the Skullgard above bounds the *danger zone* . . . the front, top, and back areas of a hat that working positions expose most often to impact. Extra protection in this danger zone area, exclusive with M·S·A Skullgards, is the result of new molding techniques, better materials, improved production methods. And it's added protection without added weight! Get the facts on this all-important M·S·A development. Write for details.

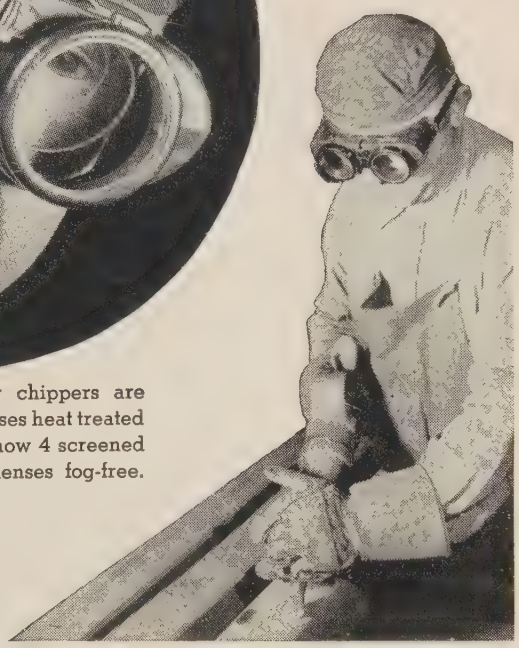
MSA
SAFETY EQUIPMENT HEADQUARTERS

Call the M·S·A Man on your every safety problem . . . his job is to help you

MINE SAFETY APPLIANCES COMPANY
201 North Braddock Avenue, Pittsburgh 8, Pa.
At Your Service: 82 Branch Offices in the United States and Canada

CHIPPERS get longer, more comfortable protection

Rigid metal top bar holds sturdy nylon cups firmly—makes goggles much easier to handle, too!



Kover-Mor® Goggles designed for chippers are fitted with Willson *Super-Tough* lenses heat treated for greater impact resistance. Note how 4 screened eye cup ports admit air to keep lenses fog-free.

WILLSON

Kover-Mor® Goggles are roomy

...fit over large-frame prescription glasses

Kover-Mor® Chipper's Goggles are made of lightweight nylon with the highest *strength/weight ratio* known for goggle cups. Chippers say they have features that make them the most comfortable goggles of all.

Snug, easy fit is assured by adjustable two-piece headband, leather bridge curtain and metal top bar. Extra ventilation is provided by slots in screw caps *plus* ports in cups.

Standard 50 mm. round lenses fit Kover-Mor® Goggles. No need to stock odd-size replacement lenses! Lens changing is simplified by external screw caps.

Ask your Willson distributor for Kover-Mor® Chipper's Goggles—available with opaque or clear nylon cups. They'll withstand toughest use.

More Than 300 Safety Products Carry This Famous Trademark

WILLSON®

Leaders in Research and Development of Safety Products Since 1870

WILLSON PRODUCTS, INC., 207 WASHINGTON ST., READING, PA.

(For details, use Key # K-20 on card on page 85)

Air Conditioning Show

Virtually every industry in the country will be affected by developments to be shown at the Air Conditioning & Refrigeration Exposition in November, according to F. G. Coggin, chairman of the exposition committee of the show, which will be held at the Atlantic City, N. J. Auditorium, Nov. 28 to Dec. 1, under the sponsorship of the Air Conditioning & Refrigeration Institute.

"Industrial development has progressed so fast that control of temperature and humidity is one of the most important elements in both maintenance of quality and reduction of production costs," Mr. Coggin declared. "Very few industrial plants can afford the luxury today of spoilage, corrosion and production delays caused by improper temperatures and humidity."

The exposition will be more than one-third larger than the last show. Exhibiting companies now total 232, with an expected 250 at the time of the opening. Displays will cover 88,000 square feet of net exhibit space.

Safety Institute

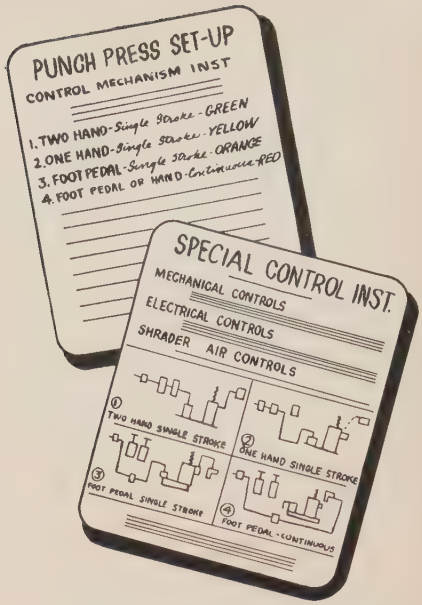
Safety representatives of small industries will have a chance to study new approaches in industrial safety practices at Penn State's eighth annual Industrial Safety Institute, November 15–17, 1955. Anyone interested in accident prevention, including safety inspectors, personnel directors, and insurance safety inspectors, may enroll in the three-day course.

Speakers and discussion leaders, experienced in industrial accident prevention, will be on hand to serve as resource men and emphasize the practical side of safety. Representatives from various industries, industrial organizations, government agencies, and safety councils throughout the State, helped to plan the course, which will be devoted to all phases of accident prevention.

For additional information, kindly write to Professor Amos E. Neyhart, Institute of Public Safety, The Pennsylvania State University, University Park, Pennsylvania.

For Press Guards...

A COLOR CODE



MACHINERY GUARD SERIES
next article in November

by **HENRY B. DUFFUS**

Administrator, Accident Prevention
Westinghouse Electric Corp.
Pittsburgh, Pennsylvania

ADOPTING a simple color code to distinguish the proper press controls for a specific die installation has considerably reduced the problem of press safety at our standard control division. Because of its success I feel that the idea is worth passing along. Keep in mind, please, that I am not advocating the painting of presses to look like Christmas trees, nor do I imply that this is a panacea for all press problems. Far from it.

Short Run Problem

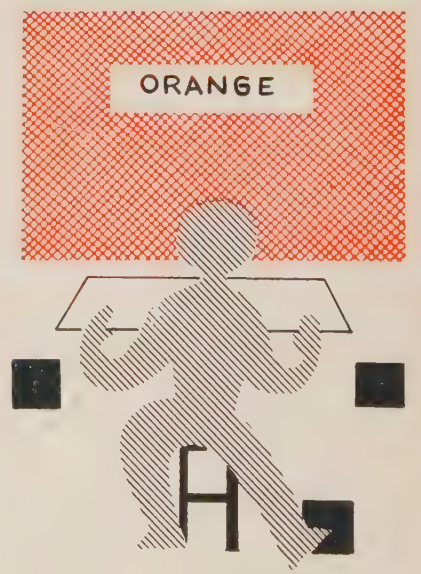
In our search for safer operation of punch presses, however, there are still a few troublesome spots that face us when we consider operator safety. One of these is the group of smaller presses that are assigned to short run jobs. I am thinking of presses up to 60 or even 90 tons and with more than a 3-eighths inch stroke where you may change the set-up 3 or 4 times a day, from strip feeding to second operation forming; to first operation blanking or bumping; the kind of a job that requires a variety of press feeds.

To give the proper background, let me talk about our standard control division. A high percent of the work there is sheet metal, bus ducts, switch and control boxes, etc. Supplementing the larger draw presses, multislide presses, and other presses that carry the load of the long run operations, are a group of some 50 or more presses and some 2000 dies that are assigned to short run work. Generally girls operate the presses with a set-up man responsible for setting up new jobs and keeping the job running smoothly. All of the presses are equipped with two hand and foot controls either electro-pneumatic or straight pneumatic controls. About 70 percent of the dies are equipped with die enclosures, the rest are open dies.

Possibility of Injury Serious

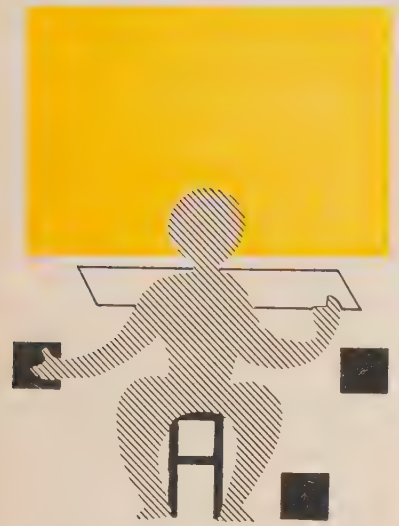
With two or three press changes a day you can readily see the possibility of a set-up being made and controls adjusted so that the operator could have a hand free to enter the danger zone with the

FOOT PEDAL OR HAND CONTINUOUS



FOOT CONTROL SINGLE STROKE

press in operation. It is of the utmost importance therefore that extra effort be expended to be sure that the proper control adjustments are made for each set-up. To expedite this the plant has come up with a simple color scheme that informs the set-up man of the proper control method for each die installation; that lets the operator know the controls to use with each new set-up, thus holding her equally responsible for improper use of controls; and that makes conspicuous to anyone in the immediate area the fact that the operator is or is not operating safely.



ONE HAND
SINGLE STROKE

TWO HAND
SINGLE STROKE

4 Control Colors Used

To accomplish this, a set of 4 colors were adopted and the front of each die shoe was painted its associated control color for its safe operation. For example, when a die requires two-hand control for its safe operation then the die shoe is painted green; when a set-up man installs such a colored die in a press he adjusts the press controls for two-hand, single stroke operation. Similarly a die to be used for strip feed and requiring one hand to feed the strip would have the die shoe painted yellow.

Again the set-up man makes the die installation, locks out or cuts out the right hand control and adjusts for single stroke. A job that is die-enclosed so that the operator's hand cannot enter the danger zone is painted orange. This permits single stroke foot operation with both hands free to handle stock. The shoes of dies that require both hands to be free and the press to run continuously are painted red.

In setting up this system, a committee consisting of the Safety Supervisor, Methods Engineer, and the department foreman determined the method of operation for each die. They periodically survey the operations to be sure that the system is being maintained. In addition a designated representative is set up to take care of all new dies.

So that each person will be properly informed of the system, a punch press set-up Card is made available to each set-up man. The text of the card is shown below:

PUNCH PRESS SET-UP

Control Mechanism Instructions

There are four general control methods available on most of our presses. These are:

Control Method	Die Color Code
1. Two Hand—Single Stroke	Green
2. One Hand—Single Stroke	Yellow
3. Foot Pedal—Single Stroke	Orange
4. Foot Pedal or Hand—Continuous	Red

The method of operation is to be determined for each die by a Committee consisting of the Safety Director, the Methods Engineer, and the Department Foreman or their designated representatives. Their determination will be noted on the Operation Card and the die color coded to indicate the control method to be used. Control methods shall not be changed due to addition of guards, die changes, etc., unless reviewed and approved by this committee.

The Operation Card file will be maintained by the group leader.

It will be the die-setter's responsibility to set-up controls as indicated on this card and the color code on the die.

When first Inspection Card, Form 21166, is made out the inspector will check the control set-up; and if it is done according to approved method, will note on back of card "Control Approved," date, and initial.

If for any reason a special set-up may require other than approved control arrangements, the department foreman must inspect the set-up, make provisions to give the operators any special instructions that may apply and note on back of Form 21166 "Special Control Approved," date, and sign.

The back of the card contains instructions on how to set the controls, mechanical electrical or pneumatic.

As I wrote in the beginning, it's a very simple system that makes it easy to enforce the proper use of press controls. Whether it will work in a particular situation the particular management can be the best judge. It has worked for us. It costs little to try it out.

Pictures by courtesy of Westinghouse Electric Corp.

Fork-Truck Batteries Do Everything

The storage batteries that run the industrial trucks in the E. W. Bliss Company plant at Canton, Ohio perform many other tasks besides keeping the trucks on the move.

In the unhappy event of a power failure, special flood lights are placed in brackets on the trucks and plugged into the truck battery. The lights used are 200 watt, sealed-beam, locomotive headlights adapted for use on 36 volt current. Six lights are available at all times at the truck charging station and two are placed in each of the 4 production buildings. Strong, steady light can be made available anywhere in the plant or grounds that an industrial truck can reach. These lights have been used 3 times in 3 years under emergency conditions.

Industrial truck batteries can also furnish power to the plant telephone system in an emergency by means of a special connection. The regular stand-by batteries will power the telephone system for 3 hours, then a fork-lift truck is driven to the telephone room, plugged into the system to permit communications for several additional hours.

Occasionally the inter-building diesel locomotive requires more time to start than can be supplied by the regular, diesel-starting batteries in the locomotive. A fork-lift truck is parked alongside the locomotive, the truck battery is plugged into the diesel starting system. The battery furnishes the extra ampere-hours needed in cold weather.

Because of the great size and weight of the presses, mills and special machinery built by Bliss, a battery-powered transfer car runs on standard gage track connecting all 4 buildings. This 40-ton car is powered with a 72-cell battery which is charged about twice a week for 4 hours at each charge from a special charger placed near the track. The battery is inspected and cleaned monthly. Water is added weekly to replace electrolyte lost through normal evaporation.

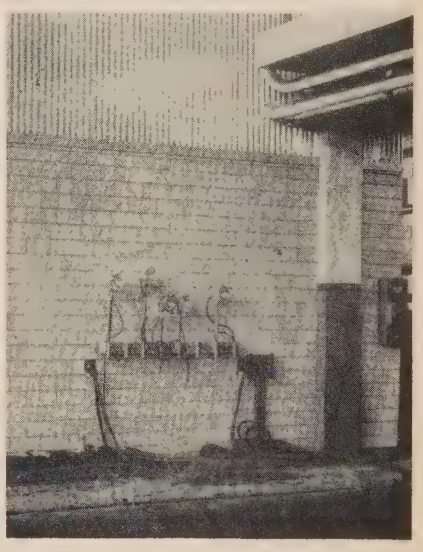
With such reliance placed on industrial batteries, they receive excellent care. The motor-generator sets and control panels for battery charging occupy part of the powerhouse. Charging leads are brought through the wall separating the powerhouse and the battery charging station in permanent conduits with two or three leads coming through each conduit. The 12 rider-type trucks are parked at the charging station by their operators. A powerhouse attendant records the specific gravity of each battery, and plugs in the battery for overnight charging.

Eleven rider-type trucks are assigned to jobs on a daily basis. Nine of these are 6000 pound fork-lift trucks and two are low-lift platform trucks. One truck with a crane is divided between the shipping and maintenance departments. Battery size has been standardized so that any battery can be used in any truck.

Although charging is done in the trucks, a hoist mounted on a boom is available for changing batteries when necessary. Batteries are cleaned periodically in the garage with steam followed by soda applied with a brush and rinsed off with water.

Pictures by courtesy of Gould-National Batteries, Inc.

Two hundred-watt 36 volt locomotive headlight is placed in special bracket on fork-truck and plugged into truck battery to furnish light in any kind of emergency.



Note special flood lights operated from truck batteries available in brackets on wall at charging station for emergencies.

In picture above battery is being cleaned with steam preparatory to being brushed with soda and washed with water in regular battery maintenance and cleaning procedure.

Safety Maintenance SALUTES

A SAFETY IDEA

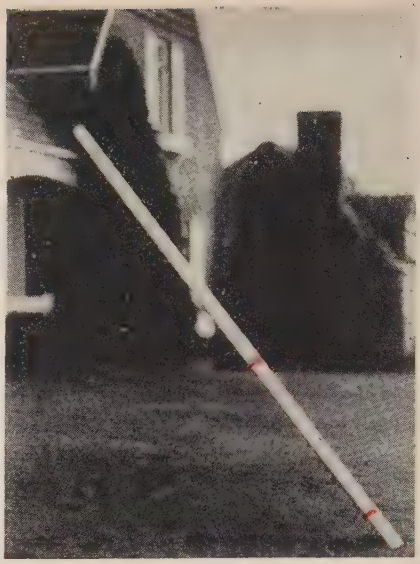
America's utility companies have been given a new weapon in their continuing fight to reduce accidents.

It is a guy wire protector with two bright red luminous areas that serve as warning signals during the day and reflect illumination at night.

Guy wire protectors are the metal shields that cover guy wires extending to the ground level from the poles erected by electric and telephone companies. Because of their greater area, the protectors are more visible than the wires themselves and less likely to be tripped over. In addition, they cover ends of wire that might cause injury.

The luminous areas are expected to make these protectors more visible both day and night, lessening the possibility of injury to pedestrians, and of damage to the protectors themselves.

Picture by courtesy of Hubbard and Co.



Bright red reflective bands on wire guards are new step to protect pedestrians at night against tripping and other accidents.

Plant Maintenance Show

The Plant Maintenance & Engineering Show, one of the largest annual industrial expositions in the country, will return to Philadelphia for the 1956 event, it was announced by Clapp & Poliak, Inc., New York, producers of the show.

Now in its seventh year, the show annually attracts more than 20,000 of the nation's industrial executives who are charged with the upkeep of factories and machines. At the same time, the 7th Plant Maintenance & Engineering Conference also will be presented. This conference, the largest industrial conference in the country, attracts about 2,500 engineers each year.

Two hundred and thirty-six companies leased 302 exhibit booths prior to the public announcement of the show. About 400 exhibitors are anticipated. Exhibits vary over a wide range because they cover maintenance in all its aspects and in every kind of industry. In past shows, as many as 5,000 different products and services in 278 basic types, have been demonstrated.

"The steady trend toward automation and automatic production processes in industry has resulted in a shift of emphasis in engineering," said Saul Poliak, producer of the show. "The principal responsibility of the plant engineer is now that of keeping the automatic machinery running.

"Plant labor is undergoing a shift from direct to indirect. The man who used to operate the machine now maintains it. Thus automation and automatic processes have succeeded in cutting production costs while opening up a new field for further cost reduction, that of maintenance," Mr. Poliak said.

Visitors planning to attend may write for advance registration cards to Clapp & Poliak, Inc., 341 Madison Av., New York 17, N. Y.

Railroad Safety Honors

Fourteen railroads were presented E. H. Harriman Memorial Awards for outstanding performance in 1954 in the field of railroad safety. The annual awards, presented by the American Museum of Safety, consist of gold medals for the three railroads which achieved the best safety record in 1954.

The Norfolk and Western Railway received the gold medal for Group A railroads, the largest-size category. Gold medals for Groups B and C railroads went to the Chicago, Indianapolis & Louisville Railway and the Texas Mexican Railway.

Commenting on the awards, James G. Lyne, chairman of the award committee, described the industry's 1954 safety performance as "the best over-all safety record in railway history." While passenger safety did not quite reach the almost perfect level of 1952, it matched that of the second best year, he said. In addition, railroads in 1954 set an all-time high in employee safety.

The following railroads also received certificates of commendation:

Eastern District—Group A—Reading Railroad; Group B—Bangor and Aroostook Railroad; Group C—Pittsburgh & Shawmut Railroad.

Western District—Group A—Great Northern Railway; Group B—St. Louis Southwestern Railway; Group C—Texas & Northern Railway.

Southern District—Group A—Atlantic Coast Line Railroad; Group B—Central of Georgia Railway; Group C—Atlantic and Danville Railway.

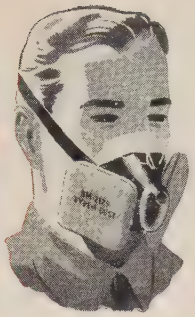
Certificates of commendation were also awarded to the following switching and terminal companies (one for large companies and another for smaller companies): Baltimore & Ohio Chicago Terminal Railroad; River Terminal Railway, Cleveland, Ohio.

Winners of awards are determined by a 10-member committee on the basis of the official safety records of the Interstate Commerce Commission, the railroads being ranked in their several groups according to size and individual safety ratings.

DUPOR No. 4

For nuisance dusts and fumes. Weighs only 4 oz.

$2.00



DUPOR No. 40

U.S.B. of M. Approved. Has 40 sq. in. filters for Pneumoconiosis producing and nuisance dusts.

$3.00

DUPOR No. 46

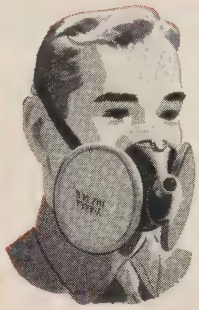
U.S.B. of M. Approved for Pneumoconiosis producing and Lead dusts.

$3.25

DUPOR No. 1

Miniature nose mask for nuisance dusts and fumes.

$1.20



DUPOR No. 24

U.S.B. of M. Approved. Has 24 sq. in. filters for Pneumoconiosis producing and nuisance dusts.

$3.00

Wear a Genuine

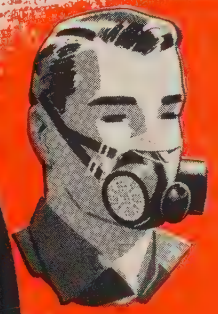
DUPOR

REG. U. S. PATENT OFF.

Respirator

light weight · greater visibility · no blind spots
face cloth for personal sanitation · panorama view
controlled breathing · exclusive patented features

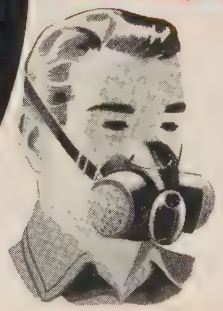
H. S. COVER
South Bend, Indiana



DUPOR No. 10

Chemical cartridges. For organic and inorganic gases.

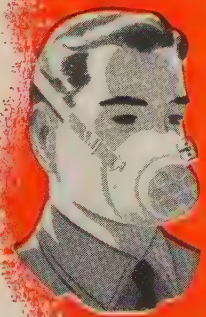
$5.00



DUPOR No. 20

Double sponge, for cool, water-washed breathing.

$2.50



DUPOR Automatic

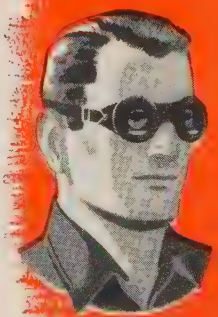
With sponge filter for water-cooled breathing.

$2.00

DUPOR Smoke Mask

Equipped with "Nod & Shake" fog-proof, gas-tight goggles.

$5.00



COVER'S "Nod & Shake" GOGGLES

Gas-tight, fog-proof. Wear with any respirator.

$2.00

(For details, use Key # K-21 on card on page 85)

He's SAFE

He's OUT

The base runner is SAFE—sliding under the catcher's tag to win the World Series.

The victim of a slippery floor is OUT —out of action with a possible fracture —and *you* may be out several thousand dollars.

Play it Safe by maintaining your floors with LEGSURE, the new LEGGE polish that gleams *without* slipperiness. You'll prevent slip-fall accidents because LEGSURE goes up to *75% beyond* U. L. requirements for slip-resistance.

And you'll save important maintenance dollars. LEGSURE never needs buffing. Stays on *longer*. Rarely requires the labor-consuming job of stripping.

Do as administrators of leading hospitals, institutions, industrial and municipal buildings are doing. Switch to LEGSURE — and *be sure*. Get full information on LEGSURE *now*. Clip this coupon today.

YOU'RE SAFE WHEN YOU HAVE LEGGE TO STAND ON

LEGGE SYSTEM of Safety Floor Maintenance

Walter G. Legge Company, Inc.
Dept. F-10, 101 Park Ave., N. Y. 17.
Branch offices in principal cities.
in Toronto—J. W. Turner Co.

☐ Please send full information on LEGSURE.
☐ Send a FREE copy of your floor maintenance booklet, "Mr. Higby and the Gremlin".

Name_____

Firm_____

Street_____

City_____ Zone____ State_____

(Use Key # K-22 on Inquiry Card on page 85)

WHAT'S THE LAW?

Edited by HENRY M. GROSSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey
American Bar Ass'n, New Jersey Bar Ass'n,
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
. . . . . Newark, N. J.

INDUSTRIAL NOISE—Compensability

An employee who suffered an impairment of hearing as a result of exposure to industrial noise while working in a drop forge plant was awarded compensation. His disability was declared an occupational disease even though he may have sustained no wage loss.

Green Bay Drop Forge Co. vs. Industrial Commission, (1953) 60 N. W. 2d 409.

It is obvious that in states which follow the rule laid down in this case or have similar statutes, an employer should take whatever precaution is necessary to reduce the amount of noise throughout his plant to prevent this type of award.

VIBRATION—Disease Cause?

Plaintiff developed trophic ulcers of both feet.. There was evidence that his feet were broken down by continued standing in a building which was vibrating from machinery. It was held that plaintiff did not suffer from an occupational disease and that his disability was not caused by an accident.

Schmitt vs. Industrial Commission, (1937) 272 N. W. 486.

In many states, however, if it could be shown that the plaintiff's condition did come from the vibration of the machinery, an award would be given to him.

SILICOSIS—from Employment?

In this case a fertilizer plant worker contracted silicosis, pneumo-coniosis, and tuberculosis, as the result of inhaling dust and fumes. An award was denied on the ground that no specific rule included in the statute pertaining to working conditions and health and safety had been violated by the employer. Therefore the disease, which was obviously contracted in the course of employment, was not compensable.

Grutzius vs. Armour & Co. of Delaware, Inc., (1941) N. E. 2d 707.

The case above is another illustration of the employer paying no award to a disabled employee when the employer has provided the proper health and safe-working conditions according to law.

Chicago Power Show

The Chicago Exposition of Power and Mechanical Engineering will be held in the Chicago Coliseum on November 14 to 18 under the auspices of the American Society of Mechanical Engineers, as a part of the Diamond Jubilee Annual Meeting, which concludes the year-long celebration of the Society's 75th year.

The exposition will cover every phase of power generation and industrial use. Exhibits for which space already has been allotted embrace such widely assorted equipment as Diesel engines, electric motors, oil purifiers, speed reducers, vibration control systems, electrical testing instruments and instruments for the automatic control of apparatus ranging all the way from machine tools to entire plants for producing power or regulating its use in manufacturing.

For the power plant itself, there will be exhibits of package boilers, car shakeouts, dust collectors, insulation, refractories, feed water heaters and regulators; pumps, liquid-level controls, condenser tubes and water treatment. There will also be new developments in heat exchangers and steam separators, as well as a great variety of valves and fittings, flexible couplings, piping and pipe hangers, to meet the rigid demands of new design in power plants.

Atomic Power Featured

An Atomic Power Section will be a feature of the exposition, disclosing phases of the application of atomic energy to power of special interest to mechanical engineers. This new field imposes many engineering problems that have never before been encountered, from the shielding of reactor plants and radio-active materials in transit and in use, to the conduct of many manufacturing operations by remote observation and control.

The Chicago Power Show is under the management of the International Exposition Company, 480 Lexington Ave., New York 17, N. Y. E. K. Stevens is the exposition manager.

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Achievements and Awards

For a considerable time, this publication has been most anxious to present to its readers information on the ways and methods of conducting effective safety programs. Beginning with our November issue, we plan to enlarge and expand this service to include basic programs used successfully for both plant and driving safety. We would welcome case histories of programs that have done a good job for you in preventing accidents. We believe that we can be a medium for the interchange of "tried and proved" programs that really sell safety. Merely address your letter or memorandum to The Editor, Safety Maintenance, 75 Fulton St., New York 38, N. Y. and enclose with it an outline of how you organize and launch your safety programs or actual literature you use in publicizing them. Safety is a cooperative venture—what helps one helps all.

A grandfather with 25 consecutive years of safe driving to his credit shared his traffic safety knowledge with the entire nation last month. An Associated Transport driver, Alfred Young of Buffalo, N. Y., was heard from coast to coast on the National Broadcasting System's pre-Labor Day "Monitor" show.

Besides giving safety advice, Young also related some of his experiences during his accident-free quarter century of driving two million miles, the equivalent of sixty times around the world.

While in New York City, in addition to press interviews, Young appeared at City Hall where Associated had set up a special safety display and driver testing clinic. Here he is receiving a special award from M. D. Kramer, Assistant to the President of Associated Transport.

The presentation of this award to Young for his driving skill, for that is what **safe** driving actually is—driving skill, is a dramatic highlight of Associated Transport's comprehensive program to stimulate greater safety practices by their truck drivers. In their program, drivers are rewarded for both accumulated and consecutive years of safe driving.

For every year a driver has a perfect safety record, he receives a jeweled gold lapel pin indicating the number of years of his safety record. When he achieves a 5-year consecutive record, he is rewarded with a watch, ring or silverware. For 10 years of accident-free driving, the A.T. drivers are given a metal-etched card mounted in a card case.

During the most dangerous driving months of the year, special incentives are offered in the form of pens, radios, and other personal items. It has been found that stress on ladies' awards encourages wives to assist their husbands in achieving safer driving habits.

Employees of National Tube Div.'s Lorain Works have added an all-time United States Steel Corp. record to their growing list of safety achievements.

Robert Urquhart, general superintendent, announced that the nearly 12,000 employees of the Lorain plant last August compiled 5,145,239 manhours of work without a disabling injury to topple the previous U. S. Steel safety record for an integrated steel plant. The new record is roughly equivalent to one employee working a total of more than 2,400 years without a disabling injury. The best previous mark was established last year by Gary Steel Works in Gary, Indiana.

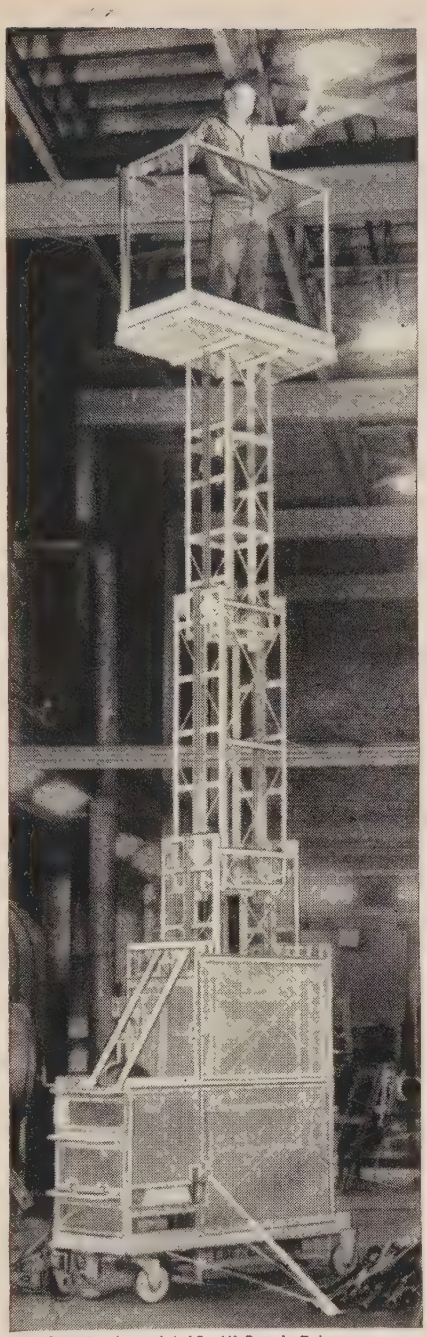
• • •

Nineteen years of accident-free driving, covering 225,000 miles, earned a National Safety Council award for Ervin Deisinger of the Miller Brewing Company's Milwaukee City Sales Department. Deisinger, who compiled his entire safety record in city traffic, encountered a minimum of three million intersections and backed up his vehicle at least 120,000 times.

• • •

The steel industry's disabling injury frequency rate—lower in 1954 than ever before—was about one-half of the all-industry average, acording to American Iron and Steel Institute. The rate for the steel industry was 3.85 disabling injuries per million man-hours worked, while the average for all industries was 7.22 according to statistics of the National Safety Council.

The steel industry has steadily reduced its rate for ten consecutive years. The rate for 1954 was 52 percent lower than ten years earlier, in 1944. Further evidence of the steel industry's progress in safety is found in a recent report by the U. S. Bureau of Labor Statistics for the first quarter of 1955. In a list of 130 manufacturing industries, blast furnaces and steel mills (i.e., basic steel) ranked fifteenth. This means that 115 industries had a higher accident frequency rate than basic steel, during the first quarter of 1955.



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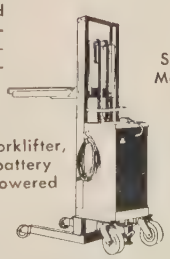

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High Cost of Horseplay

(Continued from page 24)

another employee for a bottle of liquor. The employee took a drink and proceeded to get the boy drunk. When the youth was so intoxicated that he couldn't stand, he was carried to a cot near a boiler to sleep it off.

While the boy was sleeping, the employee thought it would be great fun to daub the boy's face with various colors of paint. When the paint job was finished, the employee and other workers got quite a laugh out of the sight. The merriment attracted the attention of the foreman, who then ordered the employee to remove the paint, carefully specifying that he use soap and water and not gasoline in the process.

The employee, however, disregarded this warning and picked up a can of cleaning fluid, containing gasoline. The fumes were ignited and the employee was burned to death. In this case, the prankster and not the victim, paid with his life.

An interesting sidelight to this case illustrates the point that perpetrators of jokes can pay in more ways than one for their dangerous pranks. Dependents of the deceased jokester filed a claim for a death award but it was denied by the Ohio Industrial Commission. Ultimately the case came before the Ohio Court of Appeals, which upheld the ruling of the Commission.

"We cannot escape the conclusion," ruled the Court, "that where the injuries were sustained or death was caused through an attempt to correct a dangerous situation or a wrong done by horseplay or fooling, the attempted correction is just as independent of and disconnected from the performance of any duty as the act of the prank horseplay or fooling, and the injuries or death do not arise out of the employment and most certainly the employment has no casual connection, either through its activities, conditions or environment, with the injuries or death."

Another instance in which the perpetrator suffered more than did the butt of his joke took place in Ohio. A truck driver employed by a gravel company walked up behind and grabbed another employee, a shovel operator, who was in the act of pumping gasoline into his tank. The shovel operator warned the truck driver to leave him alone, and resumed his pumping operation. The truck driver, a persistently playful prankster, sneaked up again and pulled the shovel operator's cap down over his eyes. The infuriated shovel operator pulled out the removable pump handle and flung it in the direction of his tormentor. The heavy, metal handle struck the driver on the leg.

Promptly, the truck driver filed claim for injury, but the Court ruled that "conduct of the plaintiff amounted to nothing less than horseplay on his part, such as would hinder work, not further it. . . . In close and doubtful questions, I personally believe a court should give the benefit of the doubt to the worker. Statutory presumption so indicates and this court has and will follow such presumptions in carrying out the spirit of the workmen's compensation act. However, in this case, it is crystal clear from the evidence that plaintiff abandoned the purpose of his employment by engaging in such immature and rude actions of horseplay."

"Horseplay, teasing and practical joking are ever-present bugaboos which plague both management and union officials alike," according to Jerome A. Lukins, president of The Interstate Industrial Protection Co., which has furnished uniformed guard service for the past 25 years to more than a hundred plants in diversified industries throughout New York, New Jersey and Connecticut.

"By their very spontaneous nature, they are difficult to anticipate and control. However, it has been our experience that the very presence of uniformed guards has had the effect of reducing the accident rate in plants where jokesters hitherto had ignored pleas and commands of both foremen and shop stewards to 'cut out the clowning.'

"A uniformed guard, particularly one not on the plant payroll, is not anxious to be considered 'one of the boys,' nor does he resent being called a killjoy or wet blanket. The men realize that he has a job to do, that he can't be swerved from his duty, and they respond accordingly."

Military Issues Handling Manual

The first installments of a new comprehensive joint departmental manual governing uniform storage and materials handling methods and procedures for the Military Departments is now being distributed, Thomas P. Pike, Assistant Secretary of Defense (Supply and Logistics) announced recently.

The new publication, "Storage and Materials Handling Manual," which is being jointly developed by the Military Services, establishes uniform mandatory methods and procedures governing all phases of military warehousing. The first installment covers the storage of lumber, unit loads, and on-the-job training for operators of materials handling equipment.

Other sections of the manual are in preparation and will be completed within the next few months. Chapter I contains a general introduction. Chapter II will cover storage space (including types of facilities, planning the storage layout, space requirement factors, design of stock location system, effective utilization, and space control and reporting). Chapter III will contain storage procedures covering receiving, shipping, stock location, stock fumigation, stock discrepancies, stock number changes, inventory, and care of supplies in storage. Chapter IV of the manual will deal with materials handling equipment and principles including basic principles, selection of equipment, requirement factors, loading and unloading, and unit loads. Chapter V will contain procedures on the storage of special commodities including lumber, ammunition, vehicles, hazardous commodities, subsistence, miscellaneous commodities, and drummed petroleum products.

Mr. Pike indicated that these uniform procedures will enable the military departments to work together more effectively. The advantages of cross servicing, including greater flexibility in positioning stocks and minimizing cross hauls and backhauls, depend to a large degree on interdepartmental uniformity of warehousing procedures. The result will be better logistics support of military operations attended by important savings.

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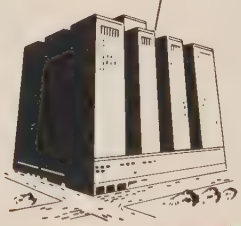

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OCCUPATIONAL HEALTH INSTITUTE
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industrial hygiene

The Industrial Medical Team

The scope of occupational health service as now practiced in industry varies from simple first-aid to highly complex activities of doctors, nurses, hygienists and engineers, engaged in the solution of health problems vital to the continuation of a manufacturing program, or even to the survival of a business.

To carry out an effective industrial medical service, management must provide the facilities and staff, medicine must provide skilled doctors, nurses and technicians imbued with the philosophy of preventive medicine. Such is the industrial medical team.

Now let's take a closer look at this "industrial team."

The Doctor

The first part of a company's medical program—dependent of course upon its size and financial abilities—is to secure a full or part-time physician.* The doctor should correlate the nursing, safety, hygiene and environmental conditions of the plant within the medical program.

The medical program should provide periodic inspection of the plant in addition to health preservation measures including pre-employment and periodic physical examinations, emergency treatment of employees taken sick on duty, first-aid and matters of infection, diagnosis and follow-up of occupational diseases and injuries, cooperation with the private physician, education of employees in health preservation, conferences with management on matters pertaining to industrial health, and accurate medical records.

The Nurse

The increasing importance of industrial health has given new value to the competence of industrial nursing in preventive medical programs.

To talk about a plant physician's work is to talk about the nurse's work too. They work so closely as a team that it is difficult to separate their jobs. The industrial nurse gives treatment that does not require medical diagnosis. She performs her duties under a written set of "standing orders" from the doctor. She does administrative work, the keeping of medical records, advisory and follow-up of cases, and employee educational activities in preventive health.

The Industrial Hygienist

The industrial hygienist, working with the medical department, supplies special knowledge to control the environmental conditions for the employees, such as control of exhaust gases which may pollute the air, potential health hazards such as water supply, light, noise and sanitation.

In cooperation with the hygienist, the plant engineer must install equipment that means better health for all workers. Mechanics must keep such equipment as dust collectors in proper condition. The industrial hygienist must also check for conditions such as con-

(Continued on page 58)

* HOW MANY DOCTORS?
How many physicians are needed for a preventive health program? Dr. Frank A. Calderone, President of the Occupational Health Institute, gives this rule of thumb:
One hour of doctor time per employee per year is the optimum goal if all services of an all-inclusive program are provided.
He advises small plants to jointly finance a central clinic or hire a physician fulltime and divide his services. Two or more small companies together can establish a full-time health program for less money than if each hires part-time medical help.

The Industrial Nurse ...and Audiometr

The audiogram, as any other medical record, is a medical-legal document. Therefore, the nurse audiometrist has a meticulous duty to assure the accuracy and reliability of all the factors that might affect the validity of the audiogram, such as the calibration of the audiometer, the fit of the earphones, the absence of interfering background noise, and the skill of the operator.

Instrument calibration of the audiometer should be obtained at regular intervals. In the periods between these more reliable calibrations, the skilled audiometrist, by checking her own or a known associate's hearing, will be able to detect an instrument that has gone out of calibration. Thus daily, or more frequent checks, particularly important in survey work, may avoid the necessity of discarding data at a later time.

Important among the factors which the critical operator will consider is the fit of the earphones. The hole in the earphone should fit directly over the ear canal and the phones should fit snugly but not tightly. Eye glasses and earrings should be removed to insure a better fit of the phones. Hair should be pushed back so as not to interfere with hearing.

Background noise in the audiometer room must be below a certain level and noise level analyses should be made occassionally in the booth, especially if changes have occurred in the surrounding area. The person doing the audiometric testing should work rapidly in order to avoid fatiguing the testee, but thoroughness and accuracy must not be sacrificed for speed. A written procedure should be available to all who perform such tests.

The attitude of the operator is as important as his skill, if the data is to be reliable. The person must be relaxed if he is to cooperate and get an accurate hearing test. A friendly manner on the part of the operator will help put him at ease. A simple explanation of the procedure will help to allay apprehension and encourage the person to respond easily and rapidly. The nurse must realize that many people with hearing loss have emotional problems. Tinnitus, or ringing in the

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Better Protection of Worke

"Up to the present the atomic energy industry is widely believed to be safer than other comparable branches of industry" declares a paper which the International Labor Organization contributed to the International Conference on the Peaceful Uses of Atomic Energy in Geneva last summer.

The paper called "the Protection of Workers Against Ionizing Radiations" goes on to explain that this situation is largely due to the fact that the atomic energy industry "is still in the experimental stage, is progressing cautiously under government auspices and is controlled by highly specialized staff having necessary background knowledge." It adds:

"In fact, while in nuclear research centers or atomic energy establishments the risks inherent in ionizing radiations and the indispensable precautions that they call for are perfectly well known, this is not so in the numerous industrial and other establishments that are already using radioactive substances or will be using them in the near future. It is thus on this kind of use that preventive action, and hence training activities, should concentrate if workers are to be adequately protected."

The radiations covered are X-rays, gamma rays, alpha particles, beta particles and neutrons. The paper deals mainly with the nature of injuries caused by ionizing radiations: standards of exposure to these

Part II

by **ANNE G. BAKKER, R.N.**
Eastman Kodak Company
Rochester, N. Y.

ears, may result in great discomfort and instability. The person with a hearing loss may hesitate to keep asking people to repeat conversation and, in some cases, may actually avoid social contacts.

Repeatedly making audiograms tends to become monotonous unless the operator knows and believes in the need for accuracy and consistency. A knowledge of the over-all field of the noise problem, including noise level analysis and noise control methods, as well as audiometric testing, helps to keep the operator's interest alive and active. Knowing the noise level of the area in which the employee works gives the nurse a better understanding of worker's problems.

All of these factors and conditions emphasize the position of the nurse audiometrist as a team member.

From an address before the 1955 Industrial Health Conference.
Reprinted by courtesy of American Association of Industrial Nurses' JOURNAL.

gainst Radioactivity Hazards

radiations; uses of such radiations; and protection against them.

The section on protection is very comprehensive. It first sets out the principles underlying protective measures. Then it deals with generally applicable precautions such as the proper planning and equipping of plant, precautions against inhalation and ingestion, limitation of working hours, monitoring, the handling of radioactive substances, the disposal of waste, supervision and training of personnel, and medical supervision.

The paper also briefly discusses problems arising in uranium mining and processing; and safety in transport of radioactive substances. It attaches considerable importance to the proper packing and labelling of consignments and refers to the new danger symbol designed by the Office and discussed by the ILO Chemical Industries Committee and other agencies.

Appendixes include the chapter on dangerous radiations contained in the ILO's Model Code of Safety Regulations for Industrial Establishments; examples of medical record forms; and recommendations on the prevention of dust in mining, tunnelling and quarrying adopted by a meeting of ILO experts in 1952. Copies of the paper can be obtained for 50 cents from the International Labor Office, 917 15th St., N. W., Washington 5, D. C.

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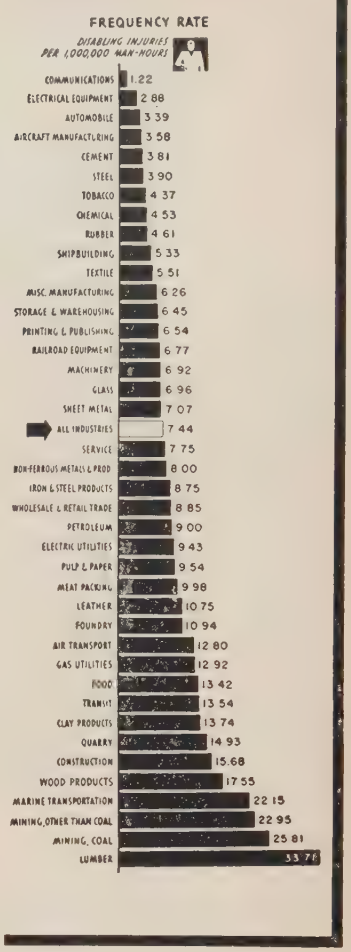

*National Safety Council's "Accident Facts" 1954 Edition

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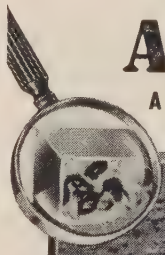

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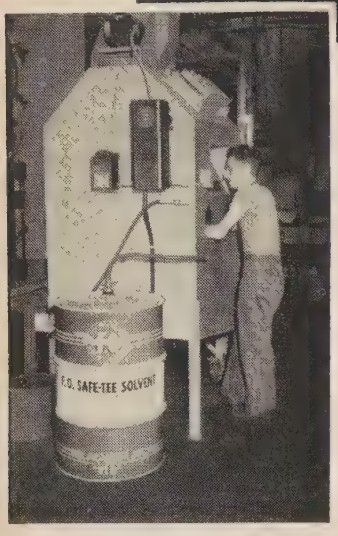
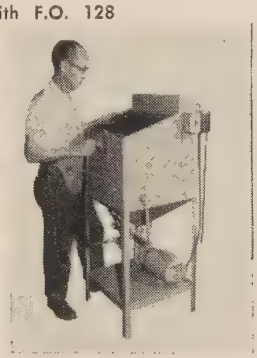
(For details, use Key # K-31 on card on page 85)

FINE ORGANICS' 'SAFE-TEE' SOLVENT F.O. 128 GOES TO WORK FOR INDUSTRY



Actual photographs of machines designed and built by **MARTIN AIRCRAFT, Baltimore, Md.** for cleaning and degreasing large and small parts with F.O. 128



FINE ORGANICS is proud of the part it plays in helping THE MARTIN CO. perform an effective cleaning operation on both large and small parts. Many leading organizations are finding F.O. 128 not only a reliable cleaner but a decided factor in the elimination of personnel health hazards and wasted man hours.

PLANT MAINTENANCE SUPERVISORS

appreciate the versatility of this fast, non-corrosive cleaning solvent. Ideal for heavy work, yet will not damage delicate machined surfaces or attack insulation. It is used effectively for cleaning and degreasing ELECTRIC MOTORS, POWER GENERATORS, CONDENSORS, STARTERS, PRODUCTION EQUIPMENT, and all areas in the plant where greasy, oily dirt has to be removed.

SAFETY ENGINEERS

find the high flash point makes the use of this solvent desirable wherever fire hazards prevail.

INDUSTRIAL HYGIENISTS

recommend replacing Carbon Tetrachloride with F.O. 128. Low toxicity aids in avoiding harmful effects on personnel.

Write Dept. 'B' for information on our other Safe-Tee Solvents and the name of your nearest F.O. representative.

Ask for our Technical Bulletin "How To Clean Electric Motors."

FINE ORGANICS, Inc.
211 East 19th St. · New York 3, N.Y.

(For details, use Key # K-32 on card on page 85)

The Industrial Medical Team

(Continued from page 55)

centration of carbon monoxide where trucks are used. He trains foremen in the use of toxic materials. In cases of injury, he confers with the doctor and plant engineer to see if some plant condition can be corrected.

For the "industrial medical team" such a program means keeping the healthy worker healthy through prevention of illness and injury, promoting health and safety, and first-aid for the injured.

This is the first in a series of articles on industrial medicine and preventive health practices. Requests for information on occupational and employee health programs or problems may be addressed to: Occupational Health Institute, Inc., 6 East 39th Street, New York 16, N. Y.

The Cost of Illness and Accidents

The National Association of Manufacturers reports that a 500-man plant has an expectancy each year of 335 days of disability due to industrial diseases and accidents, and 4,500 days due to non-occupational illness and injury—a total of 4,835 man days lost per year. Translated into money, this represents an average wage loss to employees of $74,782 a year, based on a $15.26 daily wage, based on the Bureau of Labor Statistics wage index for May, 1955. This amount of loss is in proportion to the number of employees in a plant, so that in a 100-man plant the wage loss is about $14,756, and in a 10,000-man factory almost $1,500,000.

Such a loss is inevitably associated with disruption of production. In addition, it directly affects sales and therefore profits. Illness even indirectly attributable to occupational injuries or disease may also affect compensation costs. While there is an irreducible minimum number of days lost due to illness and accident, there are ways and means to cut losses to arrive at this minimum through a preventive health program.

The value of an industrial health program is published in the Occupational Health Institute's current Service Bulletin, "Your Company . . . Why An Accredited Medical Program?" It is free upon request.

A.P.H.A. Meeting

The 83rd annual meeting of the American Public Health Association and meetings of 40 related organizations will be held in the Kansas City, Missouri, Municipal Auditorium, November 14–18.

According to Dr. Reginald M. Atwater, executive secretary of the Association, the overall theme of the meeting is "Where Are We Going in Public Health?"

More than 400 scientific papers will be presented on public health topics ranging from prevention of home accidents caused by the do-it-yourself trend, through how to operate a fleet of cars at 3¢ a mile, to combatting cancer, tuberculosis, smog and radiation fall out. Members of various professions within public health—physicians, nurses, dentists, veterinarians, engineers, sanitarians, statisticians, nutritionists, entomologists, biologists, health educators and others—will share latest findings in their fields.

Occupational Dermatitis—

Industry's Biggest Disease Problem

"Diseases of the skin are taking a far larger toll of the nation's industrial output, in terms of lost productive time and compensation payments, **than all other occupational diseases combined.** The cost to industry of the average industrial worker hit with a skin disease is: 10 weeks off the job; 100 dollars in compensation payments; and 90 dollars for medical care; totalling far more than 100 million dollars annually."

These statements were made by Dr. Louis Schwartz, widely known industrial dermatologist and former Medical Director of the U. S. Public Health Service, at a press conference announcing publication of a new industrial guide booklet he has authored, published by the Association of American Soap & Glycerine Producers, Inc., titled "The Prevention of Occupational Skin Diseases."

Recent statistics compiled from a pilot survey of 11 states by the Division of Occupational Health of the Public Health Service reveal that industrial dermatoses annually account for 75.3 percent of all occupational diseases. In the 11 state area alone, 6,817 cases of skin disorders were reported, as against 2,241 cases of all other occupational diseases.

Occupational skin diseases are the most common of all occupational diseases . . . because the skin is the most external as well as the largest organ of the body and is the first exposed to environmental irritants and poisons. "The menace of occupational skin diseases to the health and life of America's 60 million or more workers can be radically reduced by the inauguration of adequate plant cleanliness programs, and most skin diseases can be entirely avoided by proper washing procedures, showering and wearing of clean and suitable protective clothing," Dr. Schwartz asserts.

Preventive Measures Can Reduce

Preventive measures can reduce the great toll taken by skin diseases in all types of industry, he continues, revealing that incidence of industrial dermatitis ranges from a high of 7.5 percent in the synthetic resin manufacturing industry, to a low of 0.4 percent for automobile manufacture. (See Table I for all industries)

Dr. Schwartz's new booklet also shows the major causes of occupational dermatitis. Highest on the list

TABLE I

Yearly Prevalence of Occupational Dermatoses by Industries

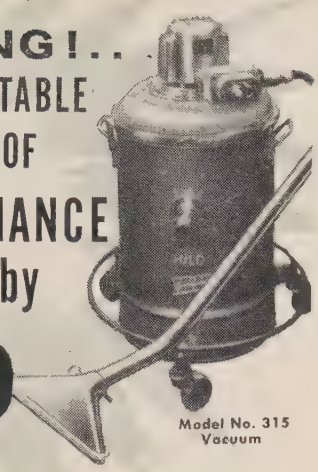
Industry	Number of Workers	Dermatoses	Percent
Synthetic resin manufacture	700	53	7.5
Chemicals and dye manufacture	2,500	176	7.0
Tanning	565	20	3.5
Oil refining	14,000	473	3.3
Candy manufacture	1,236	36	3.0
Fabric dyeing	3,800	76	2.0
Rayon manufacture	4,000	80	2.0
Steel manufacture	3,500	52	1.5
Fur dyeing	1,600	17	1.0
Rubber manufacture	8,000	84	1.0
Glass manufacture	5,700	54	1.0
Automobile manufacture	72,000	281	0.4
Total	117,601	1,402	1.2

TABLE II

Causes of Occupational Dermatitis

Material exposure	Number	Percent
Petroleum products and greases	7,805	18.8
Alkalis (and cement)	4,881	11.7
Solvents	3,265	7.8
Plants and woods	2,719	6.5
Metals and metal plating	2,482	6.0
Rubber and its compounds	1,314	3.2
Burns, physical and mechanical agents	1,313	3.2
Chemicals, unspecified	1,253	3.0
Paints, enamels, and varnishes	1,132	2.7
Acids and acid fumes	978	2.4
Dyes and dye intermediates	974	2.3
Chromates and chromic acid	727	1.7
Biologic agents	520	1.3
Coal tar products	462	1.1
Furs and fur dyes, and hides	425	1.0
Synthetic resins	390	0.9
Nonmetallic elements	185	0.4
Oils, vegetable (oils, fats, and waxes)	92	0.2
All other known exposures	8,064	19.4
Unknown exposures	2,647	6.4
Total	**41,628**	**100.0**

INTRODUCING!..
LIGHTWEIGHT, PORTABLE
EXPLOSION-PROOF
FLOOR MAINTENANCE
EQUIPMENT by
HILD



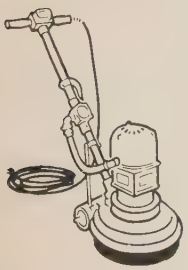
Model No. 315
Vacuum

CUTS CLEANING TIME AS IT PROVIDES SAFETY IN VOLATILE GAS AND DUST AREAS

Chemical plants, paint and starch manufacturers, refineries, distilleries, flour and grain mills—and other industries where electric sparks are a danger but where explosion-proof equipment available heretofore was too large and cumbersome—are now able to cut cleaning time and costs to a fraction. By using interchangeable attachments, a variety of clean-up jobs can be performed with HILD's Explosion-Proof machines, from floor scrubbing to dust and liquid pickup.

HILD EXPLOSION-PROOF WET and DRY VACUUMS

Can be used for cleaning floors, walls, all hard to reach places, such as overhead pipes and beams, ceilings, bins, shelves and machinery, and for removing "floating" dust. Powerful air suction picks up every drop of moisture. Combustible material removed easily and safely. Moisture in air stream cannot damage specially-designed HILD By-Pass motor. Wet and dry pickup accomplished without adjustment or change of filters. Powerful ⅛ H.P. explosion-proof motor operates on AC or DC. Safety electric switch by Appleton. Hose and caster treads made of static conductive rubber. Model 306—6 gallon wet or ¾ bushel dry capacities. Model 315—10 gallon wet or 1¼ bushels dry capacities.



HILD CX EXPLOSION-PROOF SCRUBBER-POLISHER

A multi-purpose machine. Used with easily interchangeable attachments to scrub, wax, polish and buff floors of all kinds. Motor and Appleton safety switch are totally enclosed. Bumper and wheels made of static conductive rubber. Spark-proof copper mesh cable used between connector and motor. Brush spread in popular 16-inch size.

Write today for circular giving complete details about Hild Explosion-proof Maintenance Equipment.

Maintenance Equipment & Supplies for Every Floor Need.

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(For details, use Key # K-33 on card on page 85)

are cases reported due to petroleum products and greases—18.8 percent—while the fewest number of cases—0.2 percent—result from vegetable oils, fats, and waxes. (See Table II for complete report on causes.)

Stressing the vital need to safeguard industrial workers from actual or potential skin irritants in advance, Dr. Schwartz presents a brief study of the anatomy and physiology of the skin, and lists causes of occupational skin diseases under 5 main headings:

1. **Mechanical**—friction, pressure, injury.
2. **Physical**—heat, cold, radiation.
3. **Plant poisons**—several hundred woods and plants.
4. **Biological**—bacteria, fungi, mites, etc.
5. **Chemical agents**—"primary irritants," such as strong acids or other corrosives; and "sensitizers" like TNT or resins that do not cause dermatitis at once but pave the way on further contact.

The synthetic resin, chemical, petroleum, and automobile industries rank high in a list of occupations most subject to dermatoses. Other industries included are food canning, rayon, rubber and glass manufacture.

Then Dr. Schwartz outlines the most effective, usually relatively simple, measures for preventing dermatoses on the job. Chief among these is **personal cleanliness**, without which any program of plant protection must fail, according to the doctor.

An Effective Cleanliness Program

An effective program of personal hygiene will provide for quick removal from the skin of any irritants unavoidably contacted at work. Such a program should:

1. **Provide** running hot and cold water, a proper industrial cleanser and towels no further than 100 feet from the place of work; and enough showers so no worker need wait more than a few minutes.
2. **Educate** workers thoroughly in the importance of personal cleanliness, through posters, safety meetings and campaigns.
3. **Allow** for inspection of workers' skin at periodic intervals.
4. **Provide** the skin cleaner best fitted to combat the irritants involved in a particular type of industry.

Dr. Schwartz examines the antibacterial properties, pH concentration and cleansing power of many kinds of available industrial cleaners—solid, liquid, powdered, and superfatted soaps (including a special "indicator" soap that turns bright red in the presence of even minute amounts of TNT): soluble and insoluble scrubbers; synthetic detergents, sulfonated oils, and waterless cleansers.

Beyond personal cleanliness, writes Dr. Schwartz, " 'environmental cleanliness'—often called 'good housekeeping'— is essential in any industrial plant." Good industrial housekeeping reaches into many corners, and includes proper plant ventilation and design in order to reduce initial contact with irritants to a minimum, and the provision of protective clothing where warranted. Of considerable help, too, are vanishing, water-repellent or solvent-repellent ointments and

ABOVE—Petroleum solvent used to clean hands caused this. UPPER RIGHT—Chloracne, from clothing soaked in cutting oils. MIDDLE RIGHT—Wool dyes caused this special type dermatitis. LOWER RIGHT—Dermatitis from contact with phenolic resin glues.

creams, and special lotions to prevent excessive drying and chapping of the skin.

The Skin—A Complex Mechanism

According to Dr. Schwartz, an understanding of the complex nature of the skin is one of the first steps in combatting dermatitis. With its subdivided three layers, its many openings, and its protecting, and secretory and excretory functions, the skin composes an entire, separate system of the body.

The ability of the skin to absorb chemicals, mineral fats and oils, as well as some gases is an important factor in occupational dermatitis. Dr. Schwartz also points out that the "acid-mantle" on the skin, which serves as a barrier to disease, can be washed off too easily; or, if allowed to remain unwashed, will decompose and develop an offensive odor. Still another important physiological fact about the skin is that sweat, while sometimes a protective coating against disease, can also soften the skin to such a point that it becomes more vulnerable and permeable by external irritants.

"Then too," adds Dr. Schwartz, "study has shown that there are certain predisposing factors, including race, type of skin, tendency to excessive perspiration, diet, age, sex, season of the year, already-existing skin diseases and most importantly, lack of cleanliness."

Allergic dispositions play only a small part, he concludes.

Better Prevent—Instead of Cure

Difficult to detect and diagnose, often resistant to treatment, most industrial dermatoses have proved to be test cases of the old adage, "an ounce of prevention is worth a pound of cure."

Pictures by courtesy of The Association of American Soap and Glycerine Producers, Inc.

KEEPING UP WITH...

DERMATITIS RELIEF

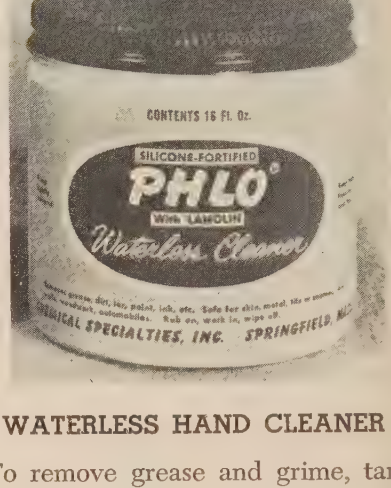
A non-irritating, greaseless vanishing cream for the relief of several types of skin rashes and infections has been developed by Dermatar Co., Inc. Called "Carbo Cream," the product contains a coal tar preparation as a soothing agent, and other ingredients are said to have a stimulating effect on denuded tissues. When massaged well into the affected area, the cream provides relief for oil and other industrial dermatitis, athlete's foot, ring worm, acne, eczema, poison ivy and other skin disorders, according to the manufacturer.

For details, use **Key # FA-1** on Inquiry Card on page 85.

AEROSOL BURN SPRAY

Dangerous, painful burns, whether caused by fire, electricity, scalding or sun, demand immediate treatment. The E. D. Bullard Company's "First On Burns," packed in 5-oz. aerosol containers, relieves pain, protects against infection and aids healing. The company states that the product is non-toxic and non-irritating to children and adults; and that it may be used safely on any part of the body. Application of the burn medication by aersol spray is quick, painless and sanitary.

For details, use **Key # FA-2** on Inquiry Card on page 85.



WATERLESS HAND CLEANER

To remove grease and grime, tar, asphalt, glue, paint and similar industrial soils, Chemical Specialties, Inc. has developed PHLO Waterless hand cleaner. This cream-type cleaner is milky white and of a smooth consistency. It is merely rubbed onto the hands, massaged briefly and wiped off. The new cleaner contains silicone and lanolin. There is no ammonia, abrasive, alkali or acid to harm delicate skin tissue or cause chapping.

For details, use **Key # FA-3** on Inquiry Card on page 85.

SCOOP TYPE STRETCHER

A new kind of first aid stretcher that permits the injured person to be picked up and transported with a minimum amount of movement of his body is announced by the A. E. Halperin Co., Inc. The company claims that the new Robinson Orthopedic Stretcher allows attendants to carry the victim to the first aid station without causing any further damage or injury to him.

The injured person does not have to be lifted onto the stretcher, but

FIRST AID & HYGIENE SERIES
other articles in August and Sept.

First Aid & Personal Hygiene Developments

is positioned by means of a "scoop" principle. The unit is made of light-weight tubular steel with a canvas head rest. It can be adjusted up to a 7′ 3″ length and can support patients weighing over 300 lbs.

For details, use **Key # FA-4** on Inquiry Card on page 85.

SILICONE CREAM

This newest addition to MSA's line of "Fend" Creams and Lotions utilizes the chemical inertness, adhesiveness and ability to repel moisture of silicones, incorporated in a bland vanishing cream.

The film provided by "M-S-A Fend-Silicone Cream" will protect the skin against such common irritants as soaps, detergents, industrial chemicals and allergens. This cream is non-toxic and is buffered to the average pH of the acid mantle of the skin. This tough durable water-repelling barrier is invisible on the skin and will not interfere with the normal action of the skin glands. It is available in 3 oz. tubes for individuals or in 1 lb. jars for use in dispensary or wash room.

For details, use **Key # FA-5** on Inquiry Card on page 85.

COUNTER-BALANCED MAGNIFIER

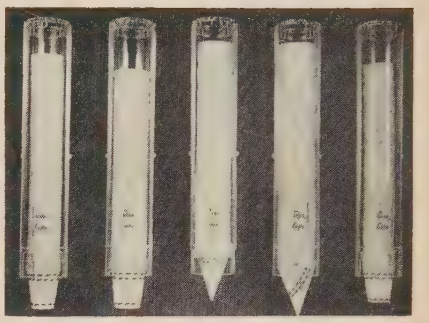
The illuminated magnifiers made by The Haas Corp. for the clearer and more effective inspection and treatment of injuries in first aid rooms and hospitals have recently been improved with a finely balanced arm which adjusts quickly to any position. The nurse or doctor can have magnified vision with good lighting under instant control for the counter-balanced arm will stay in any position without locking. Fluorescent tubes on each side of the magnifying lens distribute light evenly without glare, heat or shadows. Both hands of the nurse are free at all times to concentrate

on the work. Available with either a pedestal base or a clamp base, the new magnifier provides better examination of superficial wounds, lesions, eyes, throats, and x-ray plates.

For details, use **Key # FA-6** on Inquiry Card on page 85.

WATER CUP DISPENSERS

Five new clear plastic water cup dispensers have recently been developed by the Dixie Cup Co. for its cone shaped or flat bottom water

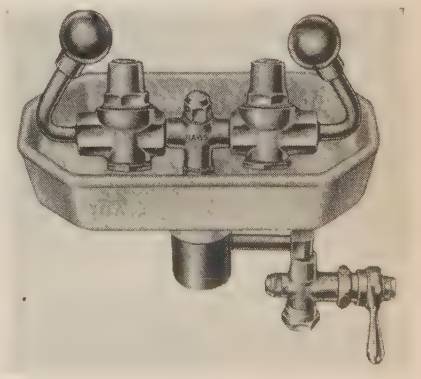


cups. To provide sanitary drinking cups at water coolers, the dispensers are economical, durable, attractive and easily cleaned. The clear plastic permits quick inspection for the need for refills. For industrial plants, the company can provide paper cups with 36 different safety messages, printed in series, and assorted within a tube, at no extra cost.

For details, use **Key # FA-7** on Inquiry Card on page 85.

EMERGENCY EYE FOUNTAIN

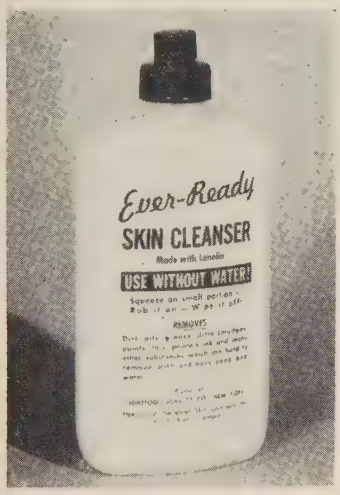
The Emergency Eye-Wash Fountain, developed by the Haws Drinking Faucet Company, makes it possible for injured workers to wash injurious chemicals and foreign matter from their eyes with ordinary tap water, while medical aid is being summoned. The device operates in the same easy manner as a drinking fountain and has



special regulators, governing both pressure and volume of water, to prevent injury to delicate eye tissues.

The Haws company also provides Emergency Drench Shower Bath equipment to cleanse worker's clothing of acids or caustic chemicals, in those first vital moments following contamination. Drench showers can be installed in conjunction with the Eye-Wash Fountain, with a drinking fountain attached or separated. The Eye-Wash Fountain may be obtained for deck mounting and is also available on a pedestal with foot treddle operation.

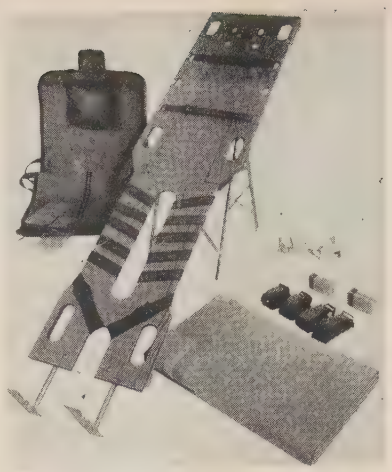
For details, use **Key # FA-8** on Inquiry Card on page 85.



WATERLESS SKIN CLEANSER

The "Ever-Ready Waterless Skin Cleanser" developed by Lightfoot Schultz Co. comes in a self-dispensing plastic bottle. The new cleanser is made with lanolin and does not contain any kerosene, naphtha or other irritating ingredients. It leaves no offensive odor, and the manufacturer states that it has been found to be highly satisfactory by both men and women in industry and offices. The cleanser, which is used, as is, from the bottle and requires no water, is effective in removing dirt, oils, grease, ditto smudges, paints, tars, printers ink and many other substances. In addition to the half-pint plastic bottles, the cleanser is also packed in 5-gallon containers.

For details, use **Key # FA-9** on Inquiry Card on page 85.



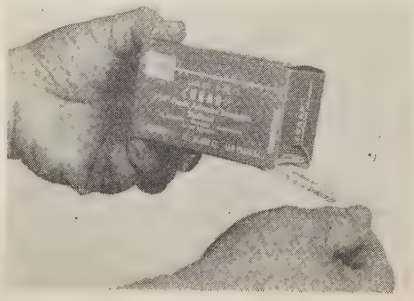
ALL-PURPOSE STRETCHER KIT

A compact, light-weight, completely self-contained first aid and field stretcher unit has been announced by Medical Supply Company. Known as the "Haggard's All-Purpose Stretcher Kit," it contains a stretcher, leg and body straps, carrying straps, traction harnesses, a blanket, first aid supplies, and an instruction book. Sturdily constructed of water-resistant plywood with aluminum fittings, the stretcher folds into a weatherproof zippered carrying case which fits easily into a car trunk. The new design permits its use as a fracture board, traction splint, or "Eve" rocking resuscitator, in addition to being able to transport patients in either a horizontal or an upright position. The complete unit weighs 28½ pounds and can be stored in an area of 24″ x 50″ x 6″. The extended stretcher measures a full 6′2″ and can support up to 1500 pounds of weight.

For details, use **Key # FA-10** on Inquiry Card on page 85.

UNIT DISPENSER PACKAGE FOR BANDAGES

A new Unit First Aid Dispenser Pack has been designed by the E. D. Bullard Company. The pack contains 40 CURAD Plastic Adhesive Bandages, 1″ wide x 3″ long. They are oil-resistant, washable and waterproof; and the adhesive back is protected by polyethylene strips, which, when removed, leave no extra pieces of thread.



The new package has a removable perforated tab. The bandages can be taken from the bottom, one at a time, making them easy to obtain and keeping the remaining units clean and sterile. The new pack is available individually or may be included along with other units in the Bullard "Safety Green" First Aid Kits.

For details, use **Key # FA-11** on Inquiry Card on page 85.

GLASS SLIVER BARRIER CREAM

A barrier cream that was designed to protect industrial workers against small glass slivers while handling glass tapes or fibre glass materials also has many other applications in preventing skin contact with irritating chemicals, dusts and poisonous plants. Called "Sanchia® Silicone Protective Cream" and made by Otis Clapp & Son, Inc., it contains 10 percent silicone and 1 percent lanolin in a greaseless vanishing cream. It can be safely applied to the hands, arms and face (except around the eyelids). Used by mechanics, painters, doctors, nurses, industrial workers, etc., it provides a protective film against chemicals, detergents, dyes, plants, soaps, etc.

For details, use **Key # FA-12** on Inquiry Card on page 85.

RADIATION & BURN TREATMENT

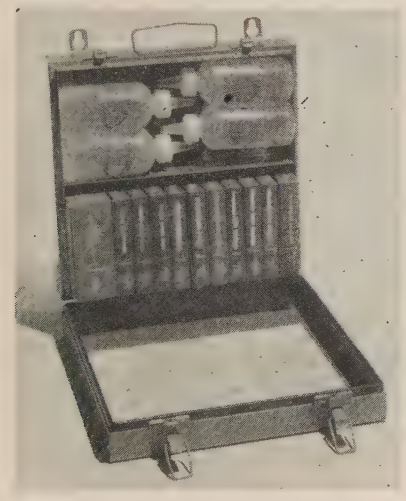
An ointment made from the sap of the tropical Aloe vera plant, lanolin and petrogel, is now available for industrial clinics in treating burns of all kinds. Known as Collins Aloe Ointment, its original

application was in the treatment of roentgen-ray burns. Subsequent tests indicate it is effective in the treatment of other burns due to radiation exposure, such as atomic ray, beta-ray, X-ray, gamma-ray and the sun's rays, as well as chemical, hot metal, electrical, steam and abrasive burns.

According to research reported by Drs. C. C. Lushbaugh and D. B. Hale of the Los Alamos Scientfi Laboratory, the ointment is the most satisfactory and successful remedy for the treatment of the devastating skin and tissue damage caused by atomic bomb explosions and in the treatment of burns resulting from exposure to beta irradiation.

Made by Collins Laboratories Inc., the Aloe Ointment is available in 12 oz. jars designed especially for industrial clinics and hospitals. Trial 1 oz. tubes are also available at low cost.

For details, use **Key # FA-13** on Inquiry Card on page 85.



ANHYDROUS AMMONIA FIRST AID KIT

Speed in administering first aid to a person who has come in direct contact with Anhydrous or liquid ammonia is essential. Ammonia may severely irritate the mucous membrane of the eyes, nose, throat and lungs, and prolonged exposure to air containing ammonia, exceeding 700 parts, will cause irritation to the eyes and possibly permanent injury. Ammonia, in direct contact with the skin, freezes tissues. The results are similar to a thermal burn.

"Neutralize," a colorless, odorless liquid, will counteract the effects of ammonia. The product

GLOVE LIFE: ONE WEEK
4 MONTHS

This report of one user is typical of the experience of many who switch to

SURETY
SURESEAL
INDUSTRIAL GLOVES

Because Sureseal synthetic has highest resistance to practically all industrial chemicals . . . plus 4 times greater snag resistance and 10 times greater abrasion resistance, you can expect similar greatly increased service on your tough-on-gloves jobs.

For all the facts — send for new SURESEAL Bulletin.

THE SURETY RUBBER CO.
Carrollton, Ohio

In Canada: Safety Supply Co., Toronto
(For details, use Key # K-34 on card on page 85)

"Fire-Chief Finished"
WELDING CURTAINS—SALVAGE COVERS

to confine the welding operation to a given area

used to protect machinery, and other equipment from water, dust and snow.

MADE OF CANVAS

impregnated with Hooper's Fire Chief treatment under their patent which carries the Underwriters' Laboratory seal.

A. Smith & Son Inc.
Established Eighteen Hundred Sixty-Seven
MANUFACTURERS OF REEVES STRETCHER
Ridge Ave. at Green — Philadelphia 23

"If It's Made of Canvas, We Make It"

(For details, use Key # K-35 on card on page 85)

should be poured directly into the eyes or over the skin. Packaged in four-ounce, unbreakable Polyethylene bottles, with special spray tops, four bottles of Neutralize are included in each Bullard Anhydrous Ammonia First Aid Kit.

In addition, there are eleven unit First Aid packs containing such things as gauze pads and absorbent compresses, scissors, eye dressing equipment. Complete instructions for first aid treatment are included.

For details, use **Key # FA-14** on Inquiry Card on page 85.

AEROSOL BURN KIT

A complete kit for the fast, effective first aid treatment of burns is offered by Mine Safety Appliances Co. The antiseptic, analgesic "Foille" can be applied quickly and painlessly to the affected area from the aerosol spray dispensers. The metal kit contains 4 spray dispensers, 6 tubes of Foille ointment, and packaged units of compresses, bandages, gauze pads, muslin, triangular bandages, along with ammonia inhalants, castor oil tubes, safety pins and scissors.

For details, use **Key # FA-15** on Inquiry Card on page 85.

ANTISEPTIC CLEANER

To eliminate the need for separate products to meet germicidal, fungicidal, deodorizing and antiseptic-cleansing needs in first aid, "Bactine" curbs infection and promotes healing by killing bacteria on contact. Developed by Miles Laboratories, Inc., it is useful on cuts, burns, scratches and abrasions, and its prolonged antibacterial activity is said to protect for hours against recontamination and deep-seated bacteria.

Bactine penetrates into the

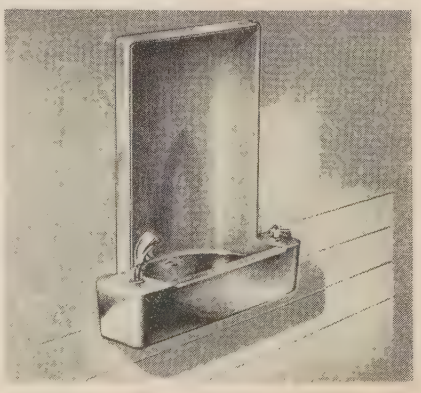
smallest cracks and crevices of the skin because of its low surface tension. It quickly soothes, relieves pain, and combats potential infection by stopping the urge to scratch. The manufacturer claims that it produces rapid and prolonged asepsis of hands superior to that of a standard surgical scrub. The germicidal action is not abolished by water, blood or body secretions.

It is not a "primary" (or allergen) skin irritant. When used according to directions, it is virtually non-sensitizing and non-toxic on intact or denuded skin. As a true deodorizer, it eliminates odors and leaves a fresh, clean aroma. A clear, colorless solution, it will not stain skin or clothing. Bactine is available in two forms—standard and concentrated.

For details, use **Key # FA-16** on Inquiry Card on page 85.

WALL FOUNTAIN

Haws Drinking Faucet Company has announced a new semi-recessed wall fountain in 18 gauge, type 304, stainless steel, No. 4 finish, with drinking faucet head and operating lever conveniently located on opposite sides of a smartly-designed platform. This Model No. 73 is a handsome, general drinking water facility for public and office buildings, schools, hospitals and restaurants, etc. An



access panel in the wall is not required, although provision for the trap must be made in or behind the wall. All fittings are accessible from under the bowl. The semi-recessed design requires it to take up very little space in room or corridor.

For details, use **Key # FA-17** on Inquiry Card on page 85.

MEDICATION FOR CHEMICAL BURNS

A new product, called "Neutralize," has been introduced by the E. D. Bullard Company, which may be used to counteract both acid and alkali burns to the eyes or skin. The product is simply poured into the eyes or over the skin to render the chemical neutral, and therefore, harmless. It is said to counteract both acids and alkalies without inducing new complications.

"Neutralize" has a pH of 7. Because it is neutral in action, it can be employed safely in high concentrations. It is available in 4- and 32-ounce Polyethylene bottles.

For details, use **Key # FA-18** on Inquiry Card on page 85.

INJURED-FOOT SHOE

The wooden-sole orthopedic shoe made by Reece Wooden Sole Shoe Co. has an airform inner sole for added comfort. The shoe provides protection and comfort after many types of foot injuries: broken toes or foot bones, burns, bursitis, sprains, severe athlete's foot, etc. The firm but lightweight canvas uppers are adjustable to any size bandage. The wooden sole acts as a splint on the bottom of the foot and in some cases eliminates the need for a cast. The corrugated metal guard to prevent further injury is optional. The shoe can be worn on either foot and is available in three sizes.

For details, use **Key # FA-19** on Inquiry Card on page 85.

Industrial Diseases

A recently published reference book, "The Diseases of Occupations," reviews comprehensively and with emphasis on its clinical aspects the problem of disease in relation to occupation. Written by Donald Hunter, M.D., F.R.C.P., Physician at the London Hospital, the informative book outlines the development of industrial disease prevention and also gives practical information on health-endangering conditions encountered in industry.

Dr. Hunter offers detailed descriptions of various jobs and indicates the type of questions medical personnel should ask patients in taking case histories. The general sections of the 1046-page book cover: Man & His Work, The Industrial Revolution, 19th Century Social Reforms, Worker Health in the 20th Century, Ancient Metals, Other Metals, Newer Metals, Aromatic Carbon Compounds, Aliphatic Carbon Compounds, Noxious Gases, Diseases Due to Infections, Diseases of the Skin & Occupational Cancer, Diseases Due to Physical Agents, Pneumoconioses, Accidents. The volume is profusely illustrated and is available for $20 from Little, Brown & Co., 34 Beacon St., Boston 6, Mass.

Noise Bibliography

This bibliography is intended as a useful reference for physicians, engineers, executives and others who may be concerned with problems resulting from excessive noise. Its preparation by Industrial Hygiene Foundation was prompted by the need for a systematic survey of the voluminous literature on the subject in order to supply a basis for a proper approach to an understanding of the problem of noise and its solution. Entitled "An Annoted Bibliography on Noise, Its Measurement, Effects and Control," the 2,336 references are arranged chronologically for greater ease in locating a particular subject and for purposes of historical background. Material is indexed by both subject and author. No attempt is made at critical evaluation.

The bibliography is available for $7.50 from the Industrial Hygiene Foundation, 4400 5th Ave., Pittsburgh 13, Pa.

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Eyeguard Prescription Safety Glasses offer you—

★ **Absolute conformance to prescription**
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Expertly ground and hardened, Wallace Eyeguard prescription safety glasses answer the need for a prescription service that is fast and accurate. Our complete line of approved acetate and metal spectacle frames will satisfy every demand. Send for price list and frame catalog.

Welders and grinders can enjoy much longer service from their prescription safety glasses if the lenses are protected with TUF-COTE. This crystal-clear treatment forms a barrier against the pitting action of burning fragments of metal in welding and grinding operations. Lenses last 7 to 15 times longer with TUF-COTE.

WALLACE OPTICAL CO., Inc.
1025 BRUSH STREET DETROIT 26, MICHIGAN

(For details, use Key # K-36 on card on page 85)

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WITH ITS (33) SAFETY ISLANDS THAT CHECK THE SLIGHTEST TENDENCY TO SLIP OR SKID
(33) TONGUES ANCHORED IN OPPOSING DIRECTIONS IN FRESH CONCRETE TO INSURE IMMOBILITY AND SECURITY OF THE PLATE
TOUGH, HOT ROLLED, DIE CUT STEEL NEVER WARPS, BREAKS OR SHOWS WEAR UNDER TRAFFIC OR PRODUCTION
EASILY INSTALLED BY YOUR OWN MAINTENANCE MEN

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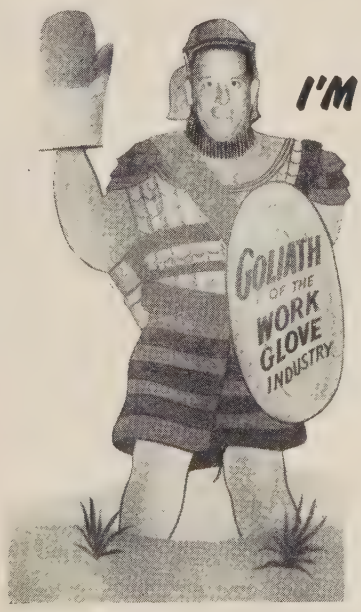
A Specialized Soap to Meet Every Type of Plant Requirement!

Whether for light, heavy or extra heavy duty, for general plant or office use, or to solve specific cleansing problems, our more than 40 years of experience in serving industry is at your service. *Your inquiries will receive prompt and intelligent attention!*

LIGHTFOOT SCHULTZ COMPANY
380 MADISON AVENUE NEW YORK 17, N. Y.

(For details, use Key # K-38 on card on page 85)



I'LL BE LOOKING FOR YOU AT THE NATIONAL SAFETY SHOW! WE'RE AT BOOTH 310.

Look for this Goliath display. The leather-faced asbestos mitt I'm wearing is only one of our more than 250 Fine Work Glove styles you'll see there!

DAVID'S GLOVES, Inc.
"Goliath of the Work Glove Field"
SPRINGFIELD, OHIO

(For details, use Key # K-39 on card on page 85)

Keeping It Clean

Keeping office buildings clean and pleasant, as well as other places of employment, is the purpose of a new American Standard. Approved and designated Z4.1-1955 by the American Standards Association, the standard precribes minimum sanitary requirements for the protection of employees' health. It covers, primarily, drinking water, washing and toilet facilities, rest and change rooms.

The project was sponsored by the U. S. Public Health Service. Copies of the American Standard Minimum Requirements for Sanitation in Places of Employment, Z4.1-1955, may be obtained from the American Standards Association, 70 East 45 Street, New York 17, at 50 cents per copy.

Industrial Hygiene Courses

In conjunction with its industrial hygiene program, the Institute of Industrial Medicine announces a group of courses dealing with environmental hazards. These courses should be of particular interest to industrial hygienists, industrial physicians, insurance representatives, safety engineers and others in the field of occupational health and safety. Although some courses in the program are already underway, the following courses are set for future dates at New York University Post-Graduate Medical School.

Industrial Hygiene: An evening course of 15 weekly sessions, beginning in Feb. 1956, consisting of lectures and demonstrations on the engineering control of occupational disease. Tuition: $66.

Air Pollution: A two-week intensive course, November 28–December 9, 1955, dealing with the techniques of sampling and measurement and control of atmospheric pollutants. Tuition: $60.

Introduction to Radiological Safety: A two-week course from January 9–20, 1956 with an optional two-week laboratory session through February 3. To be repeated again as an evening course of 15 weekly sessions (including laboratory) beginning in February 1956. The course covers the theory of detection and measurement of radiation; maximum permissible exposures to radiation; uses of radiation in industry, research and medicine; and principles of radiological safety. The laboratory session will be devoted to radiation detection and measurement, personnel monitoring, and the use of radiological survey instruments. Tuition: Lecture—$60. Laboratory—$60.

Chemical Methods in Industrial Hygiene: A laboratory course of 15 weekly evening sessions starting in February 1956, dealing with the chemical determination and definition of occupational hazards. Tuition: $66. Laboratory fee: $15.

Special Laboratory Methods: This course will provide guidance and laboratory facilities for individuals who have specific problems in industrial hygiene. Students will be accepted on the basis of their background and the complexity of their analytical problems. Hours and fees to be arranged on an individual basis.

For further information and application, address: Office of the Dean, Post-Graduate Medical School, 550 1st Ave., New York 16, N. Y.

Treatment of Burns

by J. D. DENNEY, M.D.
Columbia, Pa.

category of industrial accidents, one of the frequent types is the burn. And perhaps no ecident type presents as true an emergency as does the major burn. Immediate treatment roper character, in burns involving large areas surface, is most essential, and in a great per- of these cases is the factor upon which survival pend.

is perhaps no type of industry totally free s type of injury. Leading the industrial groups ency of occurrence are: the heavy metals in- the petroleum and derivatives production glass, plastic and chemical works. All industry, , shares to a degree in this type of injury.

of burns vary in the degree of tissue damage. roughly classify industrial burns into five gen- ups: 1. The molten-metal splash burn; 2. The ne type caused by contact with hot water or 3. The chemical burn; 4. The electric burns; 5. iation burn (the type of tissue damage caused sure to radioactive substances, X-ray, radium on elements). Each presents in its turn rather and different characteristics requiring, how- a general way, fairly similar forms of emer- eatment.

damage to the human body may be summed ew simple subdivisions: 1. The systemic dam- hock; 2. The problem of the severe pain and ol; 3. The sequel of secondary infection and toxemia; 4. The resulting alteration of surface with scarring or contracture.

rst two of these groups are of most concern to l management, for these items are matters of icy. With prompt action for their control can often be prevented. The third item in- ne original handling of the case to a somewhat egree, but well informed first aid personnel much to forestall this unhappy complication.

produce fatal results from perhaps four major 1. Initial shock; 2. Secondary infection; 3. atus due to damage to excretory function; 4. on of fluid and electrolyte balance in the blood. group of accidents is an informed personnel of value than in the wide field of the industrial t would be wise for any plant manager, no ow small the employee group, to have some nt physician or surgeon brief first aid teams cepted and somewhat standard procedure for gency treatment of burns. Inadequate or mis- reatment may shift the balance between re- r fatality. In no type of case, except perhaps massive hemorrhage, is the emergency more and the need for professional attention more

experience covering some thirty-five years we the immediate covering of the burned area land oil, sprayed from some type of pressure

SAFE, EFFICIENT INDUSTRIAL CLEANING COSTS LESS---WITH NEW BENNETT UNIVERSAL AIR-OPERATED CLEANER!

The Bennett cleaner is *safe* because it is completely non-electrical. There is no danger from sparking, because there are *no moving parts.*

The Bennett cleaner *saves time and money!* It's light and highly portable. Cleans walls, shelves, beams, storage bins and other out-of-the-way surfaces with a minimum of labor!

Powerful suction developed by compressed air (approximately 90 lbs. pressure) . . . adequate for all industrial applications. Highly efficient WET or DRY pickup.

Adaptable to any industrial application! Picks up metal chips, glass particles, etc! Interchanging bag with hose permits removal of liquids from any normal surface or tank.

NO MOVING PARTS! Unlimited life . . . no danger from sparking.
COMPACT—POWERFUL! Highly efficient WET or DRY pick-up.
LIGHT—PORTABLE! Body of aluminum casting.
EASY TO OPERATE! Designed to reduce operator fatigue. Hand-operated metering valve.

Special fittings and brushes make the new Bennett cleaner adaptable to any industrial application. Interchanging bag with hose makes it adaptable for removal of liquids from any normal surface or tank.

NO ELECTRICAL CONNECTIONS NECESSARY!

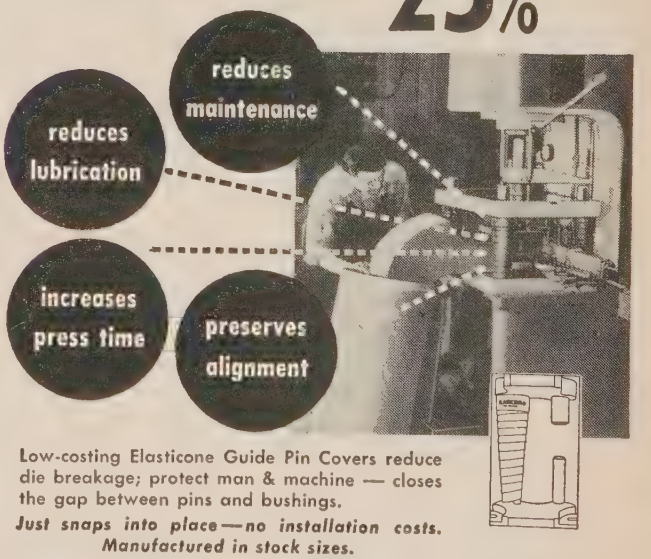
COMPLETE UNIT WITH 5" ALUMINUM NOZZLE, AND BAG $29.95 EACH

M-M-A, Inc., Lancaster, Pa.

(For details, use Key # K-40 on card on page 85)

ELASTICONE® GUIDE PIN COVERS

CUT DIE COSTS 25%



Low-costing Elasticone Guide Pin Covers reduce die breakage; protect man & machine — closes the gap between pins and bushings.
Just snaps into place—no installation costs. Manufactured in stock sizes.

Write for full information and literature.

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CENTRAL SAFETY EQUIPMENT COMPANY

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DESIGNED *for* **SAFETY**

Extensions
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Built for safety and service. Industrial ladders of *Top-Quality* material and workmanship.

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The W. W. BABCOCK CO., Inc. · BATH, N. Y.

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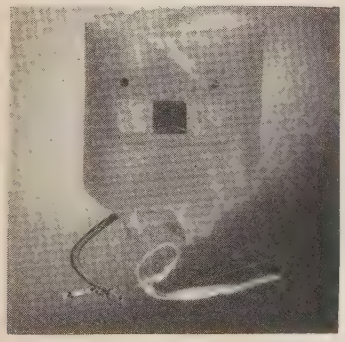
Completely New



LIGHT WEIGHT HOOD

WAGCO PRODUCTS for over a decade manufacturers of fine quality spray, vapor and dust hoods, are now proud to offer you this completely new Light Weight Hood, the only hood with headgear weighing only 7½ ounces with adjustable headgear to fit all head sizes with minimum adjustment. Air supply line has noiseless air intake. Air is filtered through ⅝" of wool felt which removes air line noises, odors, and moisture.

The Hoods are made of either clear cast vinyl plastic for unlimited vision and light, or yellow rubber coated cloth which is easily seen in areas where visibility is cut to a minimum. Both are tough and long wearing.

The complete unit, including our new light weight adjustable headgear, noise free filtered air intake, air supply line and two Hoods, (one is clear cast vinyl plastic, the other our yellow rubber coated cloth), sells for $9.95.

See your safety equipment dealer or write for name of nearest supplier.

WAGCO PRODUCTS INC. "The House Of Safety"

11274 Allen Road Dearborn, Mich.

(For details, use Key # K-43 on card on page 85)

sprayer is an imperative first step in the reduction of pain, and prevention as much as possible of the supervening shock. Narcotic sedation must be obtained as soon as available, and limitation of handling of the seriously burned patient recommended. Details of further treatment of course come within the field of the attendant physician.

Reviewing some three decades of experience in emergency treatment for the immediate relief of pain of the recently burned employee, I have run the gamut of a multitude of procedures, varying in type and mode of application. In our own experience, we have come to the conclusion that the early and complete spray application of a protective bland oil to cover thoroughly the freshly burned surface is a major and important step in treatment procedure. We have used a sterile combination of lanolin, olive oil, cod liver oil, and oil of caraway, with salol added, which has proved to be a most effective analgesic and sedative dressing with excellent final results in regard to ultimate healing time.

We cannot stress sufficiently the importance of a number of adequately trained and informed personnel in any industry where burns are a major type of injury to be anticipated. The proper care in the first half hour following the burn is of truly major importance and can be carried out properly by nurses or even nonprofessional individuals, to whom details of accepted and recommended treatment procedure have been explained and outlined.

Noise Conference

The latest information on several current noise problems will be presented at the sixth annual National Noise Abatement Symposium to be held Thursday and Friday, Oct. 20 and 21, at Armour Research Foundation of Illinois Institute of Technology, Chicago.

Three sessions will be held during the symposium: 1. Noise in Industry (Case Histories)—Description of the problem, What was done to solve it, The results; 2. Impact Noises—Practical reduction of impact noises, Instrumentation for the measurement and analysis of such noises; 3. Novel Methods of Noise Reduction—A series of papers on situations where noise reduction was obtained without the use of the usual acoustical materials.

Rescue and First Aid Convention

Alexandria, Virginia, will be the scene of the Eighth Annual Convention of the International Rescue and First Aid Association October 27, 28 and 29.

IRFAA President Phillip O. Rhynas, of Toronto, Canada, will preside at the convention sessions which will be held in the Alexandria Roller Skating Arena where part of the spacious floor will be devoted to exhibits of rescue, first aid and other equipment. Mobile equipment will also be exhibited indoors.

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(For details, use Key # K-44 on card on page 85)

BEFORE

AFTER

STARTLING RESULTS FROM SALCOLAN

A SOOTHING, PROTECTIVE AND REPARATIVE APPLICATION FOR BURNS, SCALDS AND ABRASIONS

"Rapid release from pain, early recuperation of damaged tissues, almost complete elimination of secondary infection, freedom from scarring."
—FROM A HOSPITAL REPORT

These results led this institution to *discard every other product* from its armamentarium. SALCOLAN is in wide use among industrial plants throughout the country and is highly recommended by industrial medical men.

AVAILABLE IN TWO-OUNCE TO ONE-GALLON BOTTLES. REFILLABLE STAINLESS STEEL SPRAY DISPENSERS CAN BE FURNISHED ON REQUEST.

CHECK THESE ADVANTAGES OF SALCOLAN

1) Non-toxic and harmless to the mouth and tissues of the body
2) Gives instant, cooling relief
3) Inhibits infection
4) Preserves viable cells
5) Prevents formation of necrotic material
6) Stimulates granulation and epithelization
7) Reduces scarring

R & P PRODUCTS, Inc.
129 SOUTH FOURTH STREET
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(For details, use Key # K-45 on card on page 85)

You'll find Ruemelin Fume Collectors ideal for stopping noxious welding fumes *at their source*. Counter-balanced inlet hood stays in working area, automatically. Improves working conditions . . . lessens fatigue . . . paves the way for increased plant production. Thousands in everyday service. Write for Fume Collector Bulletin No. 37E.

•

(Left) "Illustrating the 15 ft. reach collector. Handles large or small work. Units available with 15 ft., 17 ft. and 20 ft. reach."

RUEMELIN MFG. CO.
MFRS. & ENGRS. • SAND BLAST & DUST COLLECTING EQUIPMENT
3892 NORTH PALMER STREET • MILWAUKEE 12, WISCONSIN, U. S. A.

(For details, use Key # K-46 on card on page 85)

Waterworks Injuries

This report contains a detailed analysis of the frequency, severity, and kinds of injuries experienced in the operation of waterworks. Included in Report No. 83: "Injuries & Injury Rates in Water-Supply Utilities, 1953" are analyses of: 1. Injury rates by: a. Class of ownership, b. Establishment size, c. Geographic areas and states, d. Operating departments; 2. Nature of injuries and parts of body affected.

This report may be obtained free of charge by directing your request to the Bureau of Labor Statistics, U. S. Dept. of Labor, Washington 25, D. C.

Engineering Materials

The materials of manufacturing and construction in all branches of engineering are brought together for centralized identification and working comparison in "Handbook of Engineering Materials." The new source book has been edited by Douglas F. Miner and John B. Seastone, and represents the combined resources of 51 specialists from numerous fields.

The increasing tendency for one branch of engineering to overlap with another provided the basic need and impetus for this exhaustive reference work. Here, the technical properties take precedence, with emphasis on selection and use of material, adaptability to fabricating methods, availability, costs, and limitations.

Arranged by classes of related or similar materials, the first section provides general information on specifications and standards, statistics in the application of materials, and mathematical and physical tables. The second section is devoted to metals.

Details for non-metals are given in the third section. Wood and wood-base materials, paper, fibers, plastics and rubbers, organic finishing materials, fuels, carbon products, ceramic materials, industrial chemicals, and lubricants are the individual materials treated here.

Construction materials are covered in the final section, with the

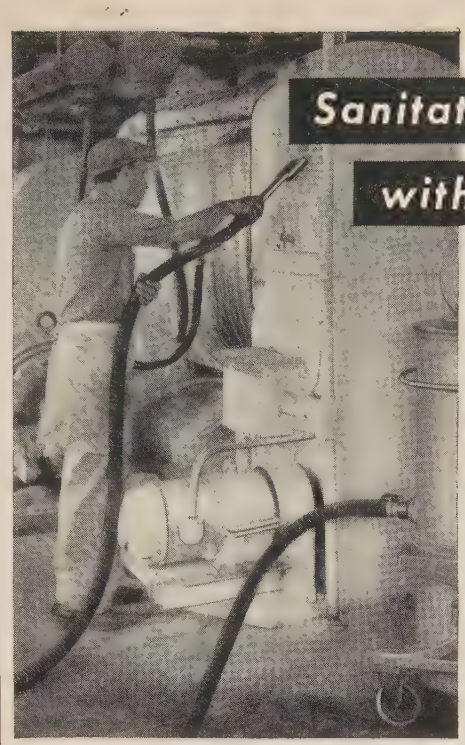
analysis directed to cementing materials and concretes, roadbed materials, timber, rope, foundations, weather and moisture protection, and glass products.

The 1382-page handbook is available at $17.50 from John Wiley & Sons, Inc., 440 4th Ave., New York 16, N. Y.

Packaging Materials

This booklet is a compilation of papers presented at the American Management Association Packaging Conference held in Chicago in April, 1955. Eighteen papers describe a wide variety of packaging materials, some of them quite new. The materials discussed include: Aluminum Foil, Glassine and Greaseproof Papers, Label and Box-Wrap Papers, Boxboard, Acetate, Cellophane, Polyethylene, Saran, High-Impact Polystyrene, Rubber Hydrochloride (Pliofilm), Vinyls, Polyester (Mylar), Expanded Plastics—Phenolics, Expanded Polystyrene, Expandable Polystyrene, Vinyl Foam and Sponge, and Urethane Foams.

Most papers include descriptions of make-up and manufacturing processes and a presentation of outstanding properties and typical applications of these materials. Requests for copies should be sent to Publications Sales Dept. P., American Management Association, 330 W. 42nd St., New York 36, N. Y. The cost is $1.75 ($1.00 to AMA members).

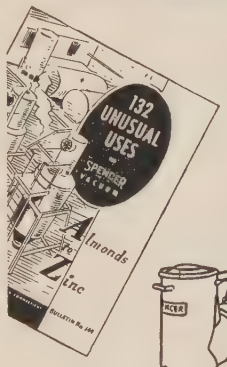


Sanitation costs less with SPENCER HARTFORD vacuum

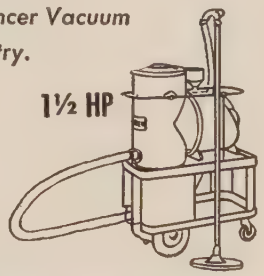
Take the job of handling hot materials, removing fly ash, picking up spilled liquids or handling fine chemical powders. Consider the time saved, the comfort and safety involved when these tasks are done with Spencer Vacuum.

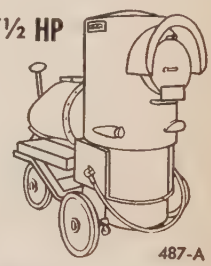
Then consider that these Spencer machines will clean your plant and your machines at night—faster and at lower cost. That you can reclaim foods, chemicals, and metals, can speed up the assembly and inspection lines—in fact you can be sure that not only your plant, but your finished products are always clean.

Spencer representatives have special information on more than 100 special applications that can improve your plant sanitation and increase production.



Send for Bulletin No. 144 describing 132 unusual uses for Spencer Vacuum in industry.





487-A

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT

SPENCER HARTFORD

(For details, use Key # K-47 on card on page 85)

Young Workers and Paper-Products Machines

Bulletin No. 181, "The Operation of Paper-Products Machines," is a report of an investigation made under the child-labor provisions of the Fair Labor Standards Act to determine what occupations in the operation of paper-products machines are particularly hazardous for the employment of minors. Its conclusions are the basis under which the Secretary of Labor issued Hazardous-Occupations Order No. 12, establishing an 18-year age minimum for the operation of some of the machines. The text of the Order is given in the appendix.

The bulletin covers the hazards of work associated with the operation of machines used to re-manufacture paper or pulp into an end product such as paper boxes, stationery, printed materials, etc. The report does not include a study of the hazards of the manufacture of paper or pulp, nor does it include nonmachine operations in a paper-products plant.

The report points out that there are many different types or kinds of machines used in the converted paper-products industries—many of which are production machines used for a special purpose. Of all of the machines, only a relatively small number are found to be particularly hazardous. The operation of the hazardous machines is discussed in detail, their hazards analyzed, and substantiating evidence of hazard from statistical data presented.

Single copies from the limited free supply of this bulletin are available from the Bureau of Labor Standards, U. S. Department of Labor, Washington 25, D. C. Sales copies may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 20 cents.

Respirators

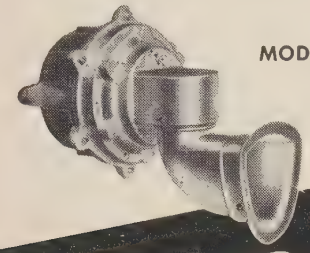
(Continued from page 38)

The acceptance of personal respiratory protection for the situations that may produce occupational diseases has varied greatly, and in some instances conflicted. On one extreme, there are many verified worker requests, even demands, for respirators because the men understood the hazards of their occupation and desired to protect their health. In other situations, workmen have requested respirators for protection from nuisance dusts primarily to avoid discomfort. In general, there has been no difficulty in getting workers to adopt this protection where there is a need, where the proper equipment has been procured, and its use intelligently supervised.

On the other hand, there have been reports of situations where workmen have been indifferent and even opposed to the use of respirators. If compelled to wear them by administrative order, they do so properly only when under very strict supervision. When the supervisor's back is turned the workmen render the devices ineffective by improper assembly, taking out exhalation valves, destruction of filters, and adjustment to make a loose fit around the facepiece. Since these attitudes sometimes show up in the same kind of industrial operations that other plants, with good experience with respirators conduct, it seems that the difference is due to management, employees, conditions of work, or the type and quality of equipment provided. Usually a lack of supervision and failure of the employer to convince the employee that protection is needed cause the trouble. It is rather significant that persons who procure and pay for respirators for their own personal protection seldom find difficulty in using them.

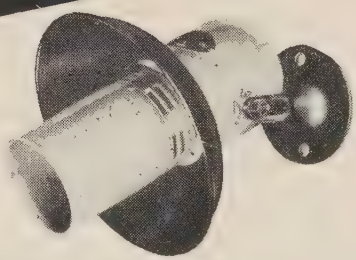
In a survey of objections to respirators, made by a large industry, a wide variety of dislikes were revealed. Some employees, especially women, do not like the disfiguring appearance. This objection is usually overcome by convincing an employee that a respirator is necessary to protect his health. It is good practice to insist that everyone who works in or enters a department where respirators are generally required, also wear a respirator. This should include foremen, supervisors, and even visitors.

Some workers object to respirators because they feel that breathing is more difficult. For persons with asthmatic conditions or those who have some lung disablement from present or past infections, and for normal persons at high altitudes, there is a basis of fact in their objection, especially if they must wear respirators with high resistance to breathing. In most instances, however, in normal individuals, the difficulty of breathing is mainly psychological. When the person puts on the respirator, he unconsciously starts to breathe faster and abandons normal, involuntary, rhythmic respiration. In other words, he forces his breathing. After a little experience, he forgets that he is wearing a respirator, breathes normally again and the discomfort and so-called distress disappears. Instructions in



MODEL 32 HORN

FOREWARNED IS FOREARMED!



MODEL "J" SIREN

It may be a trite old saying but it sure applies to many industrial hazards.

Keep people out from under suspended loads—away from moving cars and open hatchways—keep people away from danger spots and they don't become victims!

Modern audible signals are life savers! They can communicate a danger warning just as easily as they can indicate start and dismissal or call some special person to the phone. They are dollar savers as well as life savers in every phase of industrial or public building operation. Look over your property—see where lack of signals has been letting money run down the drain—if not adding to human misfortune.

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(For details, use Key # K-48 on card on page 85)

proper breathing habits should be given persons who wear respirators. Failure to replace filters of dust, fume or mist respirators before they have become plugged to the point of high resistance to breathing is another cause of mistaken complaint.

Proper instruction in adjusting the facepiece to obtain a good fit without drawing the head bands so tight that they are uncomfortable, will increase the acceptance of these devices while assuring good protection.

Perhaps the most common reason for disliking respirators is the failure to keep them clean. While a workman may not always let it be known, it is certainly revolting to anyone to place on his face a device that is not only dirty and contaminated with the materials to which he is exposed, but especially dirty from sweat, grease, and bacteria from the face, nose and mouth of either himself or another workman. Aside from creating a dislike for the respirator, failure to keep them clean and sterilized spreads infection or promotes reinfection. A respirator is a very personal device. Exchanging them without cleaning and sterilizing is a far worse practice than using the other fellow's tooth-brush or using a "common drinking cup."

No matter how good an original respirator inspection, it will be of little value unless the mask is inspected and maintained in good condition.

Compared to other methods of dust and fume control, respirators are inexpensive. Consequently, sometimes little thought is given their maintenance. Too frequently good respirators are purchased, distributed carefully, and then forgotten. In a short time, they are very dirty and function badly, if at all.

It is important that respirators be maintained in good working condition. Any respirator which is not will soon become very dirty and ineffective. A worker will object to wearing a dirty or unsightly respirator. Furthermore, if the respirator is not properly maintained, it will soon become defective and will not protect even if worn correctly and continuously. A defective respirator is worse than none because the wearer is given a false feeling of security, and will not take the precautions which he would take if he had no respirator.

There are two general systems of respirator maintenance today. They are, (1) individual maintenance, and (2), central maintenance. In the individual maintenance system, the care and upkeep of the respirator is left to the user. He is supposed to wash, sterilize and repair the respirator. In the central maintenance system, all respirators are assembled at one central point for cleaning and repairing.

Usually the central maintenance system is worked out somewhat as follows. Each worker who needs respiratory protection is supplied with two respirators. The respirators are marked with the employment number of the user. Respirators may be marked by stamping the number on metal parts, riveting metal number plates on the rubber masks, and sewing laundry tabs on the headbands. When he goes to work in the morning, the worker passes by a row of pigeon

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holes in one of which (indicated by his employment number) he finds a clean and well-kept respirator. At the close of the shift, he places the dirty respirator in the pigeon hole. The dirty respirators are all collected by one man who cleans and repairs them in a room laid out for this purpose.

One respirator per worker is sufficient if the maintenance is carried out between shifts. Usually, however, two respirators are supplied and repairs and cleaning done by one man on the regular shift. The worker in charge of the respirator maintenance need not be a new or special worker. It may be the man in charge of the stock room, or any individual who has time to do the job. Frequently, the maintenance of respirators can be combined with that of other protective equipment such as goggles and protective hats. In some industries where relatively few respirators are in use, the maintenance is one of the duties of the nurse.

The advantages of the central over the individual system are obvious. Each worker has a clean, well-kept respirator daily. He will object less to wearing it, and will get real protection at all times. The saving from the increased life of parts and decreased need for new respirators will usually more than offset the additional cost (if any) of setting up the central system.

The idea of a central maintenance bureau is not a new one. Such bureaus have been in use in a score or more industries for several years. The results produced, as evidenced by the condition of the respirators and the apparent satisfaction of the users are remarkable.

Respirator maintenance usually consists of cleaning, sanitizing and repairing. Effective methods of cleaning and sterilization are:

Cleaning:

Wash with a brush and soap in warm water.

Sanitizing:

(1) Immerse for ten minutes in a solution of formalin made by placing 1 part of 40 percent formaldehyde solution into 9 parts of water.

(2) Dip in a 3 percent solution of carbolic acid, a 2 percent solution of lysol, or a 70 percent solution of denatured alcohol.

(3) Subjecting the respirator to sterilization by a moist atmosphere of antiseptic gas, preferably formaldehyde, for a period of ten minutes at room temperature.

After following any one of the outlined procedures, the respirator should be rinsed with water and hung up to dry. The filters, felt screens and head bands (if elastic) must be removed before cleaning or sanitizing the respirator.

Many dust respirators employ so-called "long life" filters which are intended to be used over and over. Such filters are cleaned by blowing the dirt or dust off with compressed air; by brushing the surface; or by tapping the filter. If the filters are moist, they must be dried before the dust can be removed effectively. To remove grease and the like, the filter may be dipped in a dry cleaning solution for a very short time. This process should be carried out only infrequently because it decreases the life of the filter.

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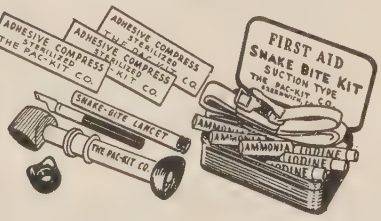

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(For details, use Key # K-50 on card on page 85)

Safety Patrol Cars Face Army Traffic Problems

Three First Army installations now have motorized safety patrol cars in operation 24 hours a day. Driven by military police, they are being used in liaison and coordination with civil law enforcement and safety agencies. Their chief function is to patrol problem areas, designated by each installation, supervise Army motor vehicle traffic and warn operators of such vehicles of unsafe driving practices.

Four patrol cars have been assigned to Camp Drum, N. Y. (one of which is shown here), three to Fort Devens, Mass., and four to Fort Dix, N. J. These First Army posts have the highest concentrations of Army personnel.

PORTABLE SAFETY GATE

Simplicity and handling ease are featured in this portable folding gate for use by police cruiser crews, highway patrols, sheriff department and highway construction groups. The gate is designed for use at the scene of an accident, around excavations, as a road block or barricade.

Its manufacturer points out that this safety barrier can extend to any length needed up to 8 feet. Completely self-contained, self-standing, the barrier measures only 8¾ inches by 36 inches when folded. The unit weighs a little more than 15 pounds and can be easily carried on the back shelf or in the trunk of a car. With no parts to assemble, screw or fit together, it is always ready to give protection.

The unit is strongly built and is painted in yellow and black, hard-wearing lacquer. With it on the job there is no time wasted and no need to haul in heavy planing or barricade lumber. The unit can go up in less than 20 seconds.

For complete details use Key # TS-19 on inquiry card on page 85.

Highway Safety Habit

"Highway safety is a way of life. You have to learn what it takes to be safe on the highways, and then you have to practice what you've learned until it becomes a habit."

This is how Dan Dugan describes highway safety. And he ought to know. His oil transport company in Sioux Falls, South Dakota, has won the Trailmobile Tank Truck Trophy four times in the past six years—plus twenty-six other major national safety awards.

Dan Dugan puts his safety theories in practice, he says, through the constant practice of "aggressive caution." By "aggressive caution" he means: 1. Careful selection of drivers; 2. Careful coaching of drivers and supervisors to create understanding of what safety means; 3. Constant maintenance of equipment; 4. High standards for defensive driving practices; 5. Constant supervision to see that high standards become habits; 6. Recognition of the importance of courtesy.

Courtesy on the highways is a major factor in his safety program. More than 300 letters a year come to his headquarters from motorists that his drivers have aided on the highway—from fixing flat tires to saving lives in highway accidents. Many of the drivers are fully trained in Red Cross First Aid. Their truck-trailers are designated as Red Cross emergency units and carry full equipment for emergency aid.

One Dugan driver has kept himself busy with a variety of courtesies on the highway that probably never will be equalled. He rescued a would-be suicide from a carbon-monoxide filled car, discovered the whereabouts of a stolen airplane, caught a runaway hog escaped from a farmer's truck, gave first aid at five serious accidents and extinguished a truck fire on the road.

(Continued on the next page)

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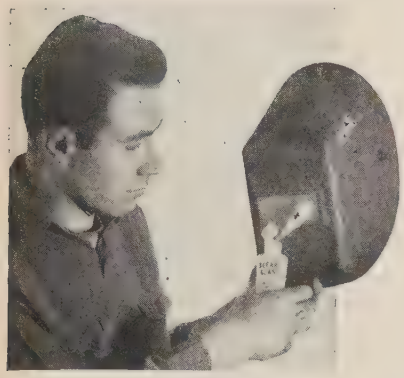

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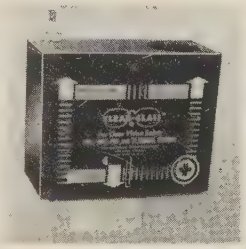

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dependable DOLGE

WESTPORT, CONNECTICUT

(For details, use Key # K-52 on card on page 85)

The courtesy on the highway that the drivers give is often unexpected—people are more accustomed to callousness and drivers in too big a hurry to stop. The letters they write in gratitude show this. Nearly all of the letters tell of money offered the drivers in gratitude and refused. Instead, the drivers leave a card with those they have helped. The card explains the Dan Dugan Safety Program, and has this message on it:

"It's fun to drive like a Dugan driver—with courtesy and consideration for all—the life you save may be your own."

This intensive safety program is good business. A lot of people think so—and not just for truck operators. Dugan management policy requires the application of modern industrial management techniques to the trucking industry, and he has pioneered many of the adaptations necessary to apply such principles to trucking.

More than 4,000 men applied for driving jobs with the company in 1954. Less than one out of 75 were hired—although more qualified. The company cannot use all the top qualified men who apply, but the company tries to leave each applicant with a better understanding of the trucking industry and the importance of highway safety.

The firm believes men "drive as they live," and they check more than over-the-road experience before they accept an applicant for further tests. Applicants must pass written tests of traffic and driving knowledge, intelligence, personality, attitudes and interests. Psycho-Physical tests for vision, steadiness and reaction time must be passed.

Previous experience is checked with past employers, the License Bureau and insurance company records. Fingerprints are checked with the F.B.I. Driving tests include closed course and road tests. The final check is a complete physical examination—and this is repeated at least once each year.

Once an applicant has been accepted, his training period begins. His record shows what he can do and can be taught to do. It shows where his strong and weak points are. These are evaluated carefully to provide the basis for training.

Four driver-trainers provide the on-the-job training of a new man. There is no rule book, no long list

of regulations. A new man is trained to drive safely and courteously until he drives that way by habit. The uniformity of Dugan drivers as a result of this training is so marked that one insurance engineer running checks on more than 50 drivers noted in his report that all but two drivers kept their vehicle "within six inches of the right edge of the lane at all times."

Dugan's safety director, Dick Olson, compares this uniformity to that established among pilots in their flight training. It is his belief that if all drivers could be trained as pilots are trained, it would eliminate 98% of all traffic accidents. And he has very nearly proved it.

A check list of 46 driving actions is used by the driver-trainers to establish 46 safe driving habits. They keep working on each action until it becomes a habit, and after that to be sure it stays a habit. Each driver-trainer turns in a weekly report to his supervisor, and these reports are evaluated and kept on file by Olson. When a weakness in a driver shows up a coaching team takes over to bring the driver back on the track.

Refined petroleum products hauling is a specialized business and it takes specialized equipment to do it. The drivers have to learn all there is to learn about this equipment, and the safety practices that make hauling gasoline as safe as hauling water. Each driver is taught how to inspect his own vehicle, and has the authority to refuse any defective equipment. This rarely happens, because of the company's efficient maintenance program.

A key to the Dugan safety record is defensive driving. This means expecting trouble at all times and driving so you are ready for it whenever it happens. Special records, tests and checks are used to teach defensive driving. Last year the company held 73 safety meetings. Booklets, mailings, posters, bulletin boards, special letters and the company publication stress the importance of safety.

Drivers who violate company standards are spotted by trainers, road patrols and check-in stations. Penalties, when called for, are given in a personal letter to the offender. It may be a warning or a layoff. It is always constructive and an appeal is invited.

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EYE-WASH
FOUNTAINS

Time elapsing between the accident and arrival of medical aid, is too often a cause of permanent eye injury. Bridge this time gap with a HAWS Emergency Eye-Wash Fountain. Installed at convenient locations, these HAWS safety devices are instantaneously ready when such accidents occur.

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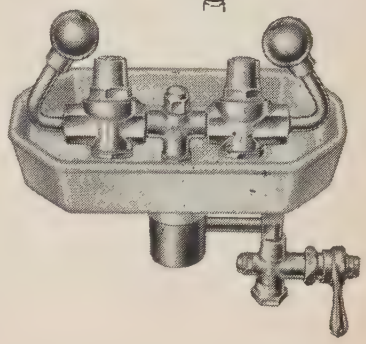

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(For details, use Key # K-54 on card on page 85)

The "Normal" Look -by day becomes The "Safe" Look -at Night

FASHIONABLY safe garments that "light up" under auto headlights at night, making pedestrians easier to see, are being introduced nationally this fall.

The garments look the same as any other garment day or night—except when seen from behind car headlights at night. Then they appear to "glow" a bright silver, visible hundreds of feet away. Their secret is a new reflective yarn.

The garments now being made available in stores across the country include boys' jackets, snowsuits and girls' jackets, men's and women's jackets, women's and girls' raincoats and rain hats, and boys' and girls' mittens. There are even specially-styled dog blankets. Knitwear items now being introduced nationally include boys' sports shirts in crew neck and collar styles, boys' socks, and boys' and girls' mittens and caps.

From Gray to Silver

The yarn is gray. In a garment it looks like any other gray yarn, day or night, except when viewed from a car at night. Then it reflects a bright silver directly back to the motorist.

It makes a pedestrian visible at night far beyond the apparent range of headlight beams, the manufacturer reports. A woman in a reflective raincoat, for example, can be seen more than 800 feet away at night with city driving lights, and over 1500 feet away with high-beam highway lights.

Latest figures show that more than 7900 persons were killed and 150 thousand injured as pedestrians in 1954. The majority of the deaths occurred after dark even though far fewer people are out at night. For years safety officials have encouraged nighttime pedestrians to "carry a white newspaper" or "wear something white"—always, necessarily, asking them to do or wear something extra.

The advent of the reflective garments marks the first opportunity to make pedestrians vividly visible at night without changing their style or asking them to carry or wear something extra, the manufacturer points out.

The need for nighttime pedestrian visibility is at least as important for adults as for children, the company continued. The National Safety Council reports that in 1954, 5700 of the pedestrians killed were over 25 years of age; 2200 were under 25.

Garments made with the new reflective yarn can be laundered,

VISIBILITY DISTANCES (In Feet) and *Availa*

permitted by garments made with new reflec

**** Available Stopping Time:***
The number of seconds it takes for a car traveling at 30 m.p.h. (44 feet per second) to reach the pedestrian after the alerted observer has first seen him.

Conditions of the Test:
1. Alerted observers. (Unalerted observers would see the pedestrian from only half as far away.)
2. Observers recorded the instant they

Low Beam Headlights

Garments	Ordinary Garment Seen at:	* Available Stopping Time	Reflective Garment Seen at:	* Available Stopping Time	Ordin Garm Seen
Snowsuit, matching caps and mittens	100 feet	2.2 seconds	525 feet	11.9 seconds	150 fe
Jacket	185 feet	4.2 seconds	495 feet	11.3 seconds	225 fe
Sport Shorts, Socks	145 feet	3.3 seconds	325 feet	7.4 seconds	220 fe
Rainwear for women	115 feet	2.6 seconds	860 feet	19.5 seconds	240 fe

cleaned and pressed. Two types of yarn are being marketed: Type 100, rayon base, 1200 denier, with 4 thousand running yards to the pound, sold in 2-pound cones; and Type 200, nylon base, 300 denier, 14 thousand running yards to the pound, also sold in 2-pound cones. Both types of yarn enable garments

topping Time (In Seconds)

rn

recognized the reflective pedestrian as a hazard, not when the reflective pedestrian was first seen.

3. Vehicles (passenger cars) were traveling at 30 m.p.h.

High Beam Headlights

Available Stopping Time	Reflective Garment Seen at:	* Available Stopping Time
3.4 seconds	945 feet	21.5 seconds
5.1 seconds	635 feet	14.4 seconds
5.0 seconds	510 feet	12.1 seconds
5.4 seconds	1,500 feet	34.0 seconds

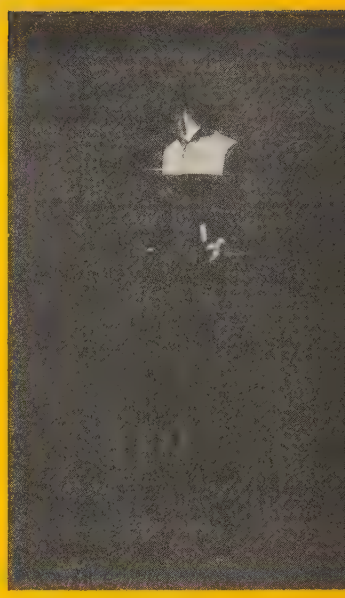
to be vividly reflective 300 to 1500 feet away at night.

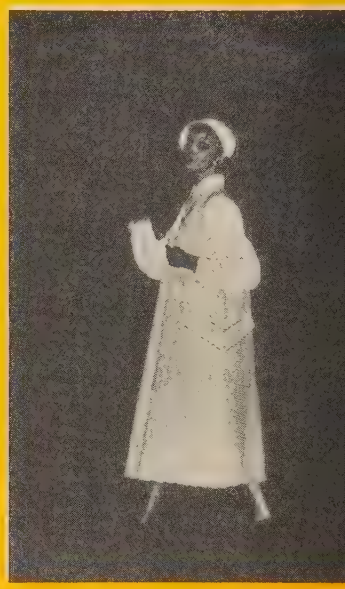
The variety of garments that can be reflectorized "invisibly" with the yarn is almost unlimited, the manufacturer says. Nighttime motorists this fall will see women in reflective rainwear, and men, women and children in reflective sportswear—and in the next few years can expect to see women in reflective dresses, blouses and capes; men in reflective suits, hats and coats; and children in other reflective clothes.

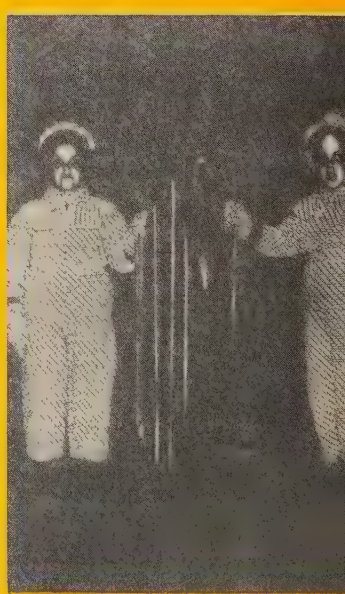
Looks Normal

The company based its prediction on the fact that people need to be seen by motorists at night but don't want to look "different." The yarn gives people the opportunity to look normal day or night—yet to "light up" at a safe distance when seen from a car at night.

Pictures by courtesy of Minnesota Mining and Manufacturing Co.







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FOR SCAFFOLDS AND SWINGS

Locks automatically, instantly. Slips onto lifeline rope. Moveable up or down with man. Instant locking position at all times, whether stationary or being moved up or down.

Snaps into safety belt: No adjusting. Inexpensive. Overall length approx. 13". Does not harm rope. Weight: approx. 5 lbs.

Recommended for use on standard ¾" or ⅞" Manila rope.

Send for folder

SAFETY TOWER LADDER CO.

1024 BURBANK BLVD. PO BOX 1052

BURBANK, CALIFORNIA

(Use Key # K-55 on Inquiry Card on page 85)

UP FAST — UP TO LAST

BRADY

Self-Sticking

Accident Prevention Signs

Unskilled help puts them up quickly—without nails, screws, or tools. Stick and stay stuck to any surface.

Wordings, colors, sizes, are recommended and approved by ASA and NSC.

Write for Catalog 145-D, free working samples, and name of your distributor.

Self-Sticking Warning Stripes

Applied fast — right off the roll. • You get stripes in 2 colors without paint or brush. • All Vinyl Plastic. • Outlasts paint. Write for Bulletin No. 143-A and free working samples.

W. H. BRADY CO.

749 W. GLENDALE AVE. • MILWAUKEE 12, WIS.

(Use Key # K-56 on Inquiry Card on page 85)

inside the trade

Robert T. Scott has been named public relations director for the *FIRE EQUIPMENT MANUFACTURERS' ASSOCIATION, INC.*, according to an announcement by L. W. Shea, Secretary of FEMA. Mr. Scott comes to his new position from the Westinghouse Electric Corporation's Information Services Department.

Among Mr. Scott's duties will be the preparation of educational material on the proper use of the industry's products in first aid fire protection. Mr. Scott will aid in coordinating FEMA's activities contributed by the industry as a Public Service.

Mr. Scott is a native of Pittsburgh, Pennsylvania. He received his bachelor of science degree from Fordham University in 1941 with a major in English and creative writing. After serving in the United States Marine Corps as a radar technician and editor of the Marine Air Group newspaper in Japan, Mr. Scott was a member of the English Department of the University of Pittsburgh where he specialized in engineering writing and technical communications.

ALAN WOOD STEEL COMPANY has announced the appointment of *John L. Hallman* as Manager of the Company's Marketing Division. He was formerly Philadelphia District Sales Manager.

The company has also appointed *J. Bremner Proctor* as General Manager of the Company's new Penco Metal Products Division, acquired recently from Penn Metal Corporation of Penna.

MACWHYTE COMPANY, wire rope manufacturers, have moved their San Francisco warehouse into new quarters at 188 King Street. A complete new building with facilities for handling, cutting, and shipping wire rope has been built.

Formerly located at 141 King Street, the Pacific Coast office and warehouse serves all classes of trade in a wide area. Other West Coast warehouses and company offices are located at Los Angeles, Portland and Seattle.

MINE SAFETY APPLIANCES CO., has moved *John W. Meehan, Jr.* from the New Orleans area to cover Europe for the International Division with headquarters in Zurich, Switzerland, his territory will include all of Europe west of the Iron Curtain, including Germany, France, Holland, Belgium, Turkey, Austria, Switzerland, Spain, Portugal, Italy and the Scandinavian countries. Mr. Meehan will work with dealers and agents on the continent and assist in training programs and demonstrations.

THE HAMMEL-DAHL COMPANY of Providence, R. I., manufacturers of automatic control equipment, announces the election of *John R. Curran* to Vice President. A graduate of Northeastern University, with extension courses at the Massachusetts Institute of Technology in Metallurgy and Applied Mathematics, Mr. Curran became associated with the company in 1945 as Design Engineer. In 1949 he was appointed Chief Design Engineer and in 1953, Director of Engineering.

THE CARHOFF COMPANY of Cleveland, Ohio, has appointed three new jobbers for their new lens cleaning tissues, and dispensers: Safety Equipment Service Corp., Richmond Hill, N. Y.; Sterling Dockson Co., Detroit, Mich.; Spokane Safety Appliance Corp., Spokane, Wash.

OXY-CATALYST, INC., of Wayne, Pa., has announced the appointment of *Gordon P. Larson*, as vice president. Larson, who for six years was director of the Los Angeles Air Pollution Control District, will assist in the development and application of the company's catalytic fume and odor control and industrial waste heat recovery systems.

PARKER SWEEPER CO. has named *Edward G. Nikoden* as sales manager for the Industrial Division. Nikoden will be responsible for all sales functions attendant to the marketing of the company's manual and motorized floor sweepers and industrial carts for maintenance and materials handling. He joined the Springfield, Ohio, company earlier this year as assistant sales manager in the lawn sweeper sales division.

THE YALE & TOWNE MFG. CO. has opened a new industrial lift truck Sales and Service Branch in San Francisco at 563 Second St. *Mr. H. M. Stiles* has been named Branch Manager. Yale hoist sales offices will be maintained in the building under the direction of Mr.

Harry Rose, regional hoist sales manager.

In addition to the Branch service organization, the company's west coast service headquarters will be maintained at the Branch. The territory served by the new branch extends from the northern California state line south to Monterey, San Benito, Madera and Mono Counties and the western third of Nevada.

"AUTOMATIC" SPRINKLER CORP. OF AMERICA has elected *Harry N. Rider* as Vice-President of the company. Mr. Rider will continue to function as manager of the fire protection company's technical and production departments.

Rider joined the firm as a laboratory helper in 1919, becoming manager of the Technical Division in 1936 and Plant Manager in 1953. He has been instrumental in much product development work, including fire alarm, control and extinguishing devices and systems.

Mr. Rider is a charter member of the Society of Fire Protection Engineers and belongs to the American Society of Mechanical Engineers. He is a member of the Fact Finding Committee, National Automatic Sprinkler and Fire Control Association and serves on various committees of the National Fire Protection Association.

SPERRY PRODUCTS INC. of Danbury, Conn. has acquired *WESTERN INSPECTION, INC.* of Midland, Texas. The announcement explains that Western Inspection will become Sperry Western, Inc., with offices remaining in Midland and Odessa, Texas, and in Lake Charles, Lafayette and New Orleans, La. Western's James H. Binford continues as President, with Sperry's R. B. Manning named Vice-President and Treasurer and D. W. Gordon Secretary and Assistant Treasurer. The acquisition was described as part of Sperry's program to expand its non-destructive testing services to U. S. industry.

CLARK EQUIPMENT COMPANY will establish a West Coast plant before the end of the year, Georga Spatta, president, disclosed recently. The new facility will be used as a parts depot at the outset and later will be expanded as an assembly plant for fork lift trucks.

PROTECTIVE EQUIPMENT INC., Chicago distributor of industrial safety equipment, has announced the appointments of G. J. Tresslar as Sales Manager for the firm and R. D. Mulhall as Wisconsin sales representative.

CLARKE SANDING MACHINE COMPANY (Canada) Limited, a newly formed subsidiary of Clarke Sanding Machine Company, Muskegon, Michigan,

Protect Your FEET with WOOD SOLE STEEL TOE SHOES

They Protect
They Insulate
They're Punctureproof

REECE has a shoe or sandal to fit the job.

No. 504-S—Heatproof
No. 501-S—Waterproof
No. 7704-S—Acidproof

See all at Booth 115

There is no substitute for Reece Wooden Soles

REECE WOODEN SOLE SHOE CO.

Dept. SM 10-55 Columbus, Nebraska

(For details, use Key # K-57 on card on page 85)

AIR OPERATED LITTELL units

- SAVE MONEY
- SAVE FINGERS
- SAVE HANDS
- SAVE TIME

...WITH dependable air operated safety units by Littell

Pres-Vac SAFETY FEEDERS...

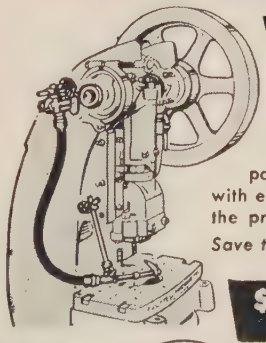
safely feed blanks to press from the safe distance of 14 inches —BY AIR!

Save those fingers.

SPEED SAFETY

$35.00

AIR BLAST VALVES...



eject parts safely with each stroke of the press—BY AIR!

Save those hands.

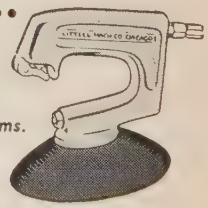
$29.00

NEWEST LITTELL UNIT

SHEET LIFTERS..

handle sheets of steel glass, plywood, boxes, cabinets, etc. Safely—

Save those Insurance Premiums.



$32.00

F. J. LITTELL MACHINE CO.

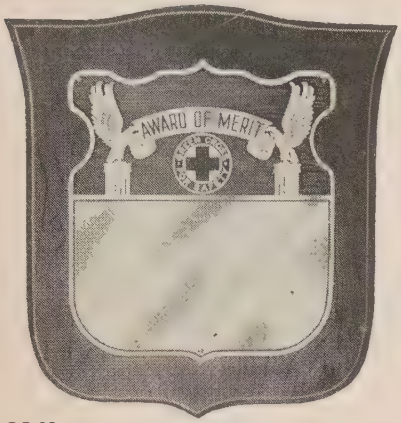
Write for FREE Catalog

AIR DIVISION
4187 RAVENSWOOD AVENUE
CHICAGO 13, ILLINOIS
District Offices: DETROIT and CLEVELAND

(For details, use Key # K-58 on card on page 85)

EVERYTHING!

In safety incentives, awards, and safety promotions



GC-11

Two-tone Jewelers bronze etching with Green Cross in enameled colors. Genuine Walnut Shields size 10" x 10½" . . . **$10.95.** Also available Plain or with AWARD OF HONOR HAND ENGRAVING ONLY 6¢ Per Letter.

Write for your FREE 36 page catalog. Today!

While attending the Safety Convention visit our new large air conditioned show rooms

1933 series is available in over 40 titles. ¼ inch diameter, hard glazed enamel, heavily gold plated pin and safety lock catch. **$10.50 per dozen** (plus F.E.T.)

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WILLIAMS JEWELRY & MFG. CO.

SILVERSMITHS BLDG. • DEPT. SM10 • 10 S. WABASH AVE.

Phone: CEntral 6-5018 • • • CHICAGO 3, ILL.

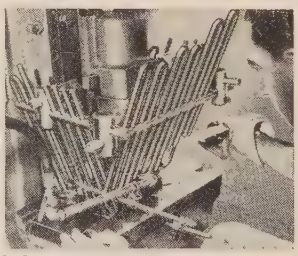
(For details, use Key # K-59 on card on page 85)

SEARJEANT Safety GUARDS

FOR **PUNCH PRESSES**

Fit any Press

30 DAY FREE TRIAL



SWEEP GUARD

Guards to fit all types and sizes of punch presses. Single and double sweep arms available. Hardened wearing parts assure years of trouble free service. Send for Bulletin H.

ADJUSTABLE BASKET GUARD

Enclosure type guard, used for blanking and other first operation work, prevents operator from reaching in or coming in contact with moving die. Easily installed on any make punch press. Also available with clear plastic window. Write for free catalogs.

Other Guards Designed and Made by Searjeant

Double Sweep Guard • Two-Hand Electro-Solenoid Control

End Zone Barrier Guard • Enclosure Guard for Milling Machines • Non-Repeat Mechanism

SEARJEANT METAL PRODUCTS, INC. No. 12 Pittsford Rd., Mendon, N.Y.

(For details, use Key # K-60 on card on page 85)

JUSTRITE SAFETY CANS guard against danger more ways!

Made stronger for greater safety. Bodies made of 24 ga. steel with "15 pound" lead coating. Rubbed for extra strength. Double lock-seam construction. Heavy cast malleable spout with self-aligning cover. **Pouring lip**, for better control in pouring, is cast directly on spout.

Available in 7 sizes—one pint to 5 gallon capacities—from your regular industrial or safety supply distributor.

SEE JUSTRITE SAFETY CANS, OILY WASTE CANS, SAFETY ELECTRIC LIGHTS, ON EXHIBIT AT THE NATIONAL SAFETY SHOW, BOOTH 18.

APPROVED, Inspected and Individually labeled and numbered by Underwriters' Laboratories, Inc.

APPROVED by the Associated Factory Mutual Fire Insurance Companies and so stamped.

APPROVED by New York City Fire Dept. Approval No. 92.

JUSTRITE MANUFACTURING CO. 2061 N. Southport Ave. • Chicago 14, Ill.

LONGEST LIFE BEST VALUE

(For details, use Key # K-61 on card on page 85)

has leased a recently erected plant at 21 Advance Road, Toronto 18, Ontario. The new plant will serve as a sales office, warehouse and service center for the line of rental and contractor floor sanders, edgers and polishers.

Clarke's line of heavy duty floor scrubbing-polishing machines and portable vacuum cleaners will continue to be distributed in Canada exclusively by G. H. Wood & Company, Ltd. of Toronto.

S. C. JOHNSON & SON, INC., has appointed *Samuel C. Johnson* as new products director and a member of the management committee. Johnson will head the newly created department which will assist in the planning, coordination and direction of the new products program of the company. Prior to this appointment he was assistant to the president.

CAMBRIDGE WIRE CLOTH CO. announces that *Thomas M. Creel* has been appointed Sales Engineer to cover the seven-state southeastern territory. Mr. Creel will represent the full Cambridge line of woven wire conveyor belts, industrial wire cloth and special metal fabrications. His headquarters will be at 333 Candler Building, Atlanta, Georgia.

Safety Appointments

R. W. Mattingly has been appointed manager of the Safety and Training Department of Texas Gas Transmission Corp., according to an announcement by John Kirtley, vice president.

Mattingly has been manager of the company's Division I safety and training activities since November, 1953. A native of Owensboro, Mattingly joined Texas Gas in September, 1950, as a safety engineer. He was promoted to senior safety engineer in May, 1952, and shortly afterward placed in charge of Division I safety and training operations.

He succeeds *Willard O. Lape* who has been appointed director of employee relations. In his new position, Lape will be responsible for the operations of the employee relations program, including employment, wage administration, insurance and retirement, safety and training, company housing and general services. He joined Texas Gas in 1950 as supervisor of safety and training and was named manager of the safety and training department in January, 1954. Before his employment by Texas Gas, he was safety director of Arkansas Natural Gas Corp at Shreveport, La.

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

MISCELLANEOUS

Utility Signs 390
Utilities Safety Supply Co., Inc. This 4-page illustrated folder shows several types of folding and "A" signs for sidewalk and roadside use. Folder also describes Danger flags, linemen's tool and glove bags, and a ground-rod driver and adaptor.

Bottle Breaker 391
Frank-Dane, Inc. A series of step-by-step pictures shows how device works to break bottles safely in business, institutions, industry, etc. Bulletin also describes uses of the device which is placed over waste can, bottle inserted, and the closing of cover smashes bottle and confines fragments.

Vibration Controller 392
The Beta Corp. Illustrated bulletin describes and gives technical data on a device that measures or monitors vibration. If machinery vibration becomes excessive, switch actuates warning or shuts off machine.

Audio System 393
Mine Safety Appliances Co. An interplant or mine communications system is described in a new bulletin. Equipment can be used to transmit safety reports, instructions, warnings, etc. Shows parts of system, accessories and diagram of typical installation.

Radiation Measuring Equipment.. 394
Nuclear-Chicago. New 48-page catalog describes and illustates complete line of radiation measuring equipment for medical, industrial, and research applications. Includes scalers; rate meters; portable devices; Geiger, proportional and scintillation counters; radiochemicals; and accessory equipment.

Explosion-Vent Windows 395
General Plastics Corp. Illustrated bulletin shows how window panes made of non-shattering tenite butyrate plastic are used as explosion vents, bending or blowing out under pressure.

Magnesium Hand Truck 396
Magline, Inc. A 4-page illustrated bulletin offers a line of lightweight magnesium hand trucks and shows users how they can custom design the standard models to meet their exact job requirements. Accessory attachments also shown.

Cyanide & Chromic Acid Waste.. 397
Fischer & Porter Co. Processes for treating highly toxic cyanides and chromium compounds in industrial wastes are described in 16-page booklet. Flow diagrams show common methods of treatment and application of instruments for controlling processes.

PERSONAL PROTECTION

New Lineman's Belt 398
Miller Equipment Co. Illustrated bulletin outlines the safety and comfort features of a lineman's belt of new design, permitting the wearer to work more efficiently without strain.

Plastic-Coated Gloves 399
David's Gloves, Inc. Well illustrated folder shows the Plastilife line of plastic-coated work gloves in a wide range of styles. Includes smooth & rough finish, full & palm dip, knit wrist & gauntlet, heavy & light duty types.

FIRE PROTECTION

Multiple Burner Control 400
Electronics Corp. of America. This fully illustrated installation bulletin describes the Fireye Integrated Control System for the safe startup and operation of multiple burner boilers. Includes complete specifications, diagrams, operating procedures and installation directions.

Fire Fighting Equipment 401
Fyr-Fyter Co. A new 16-page catalog on interior fire fighting equipment features a new line of easy-to-install extinguisher cabinets. Catalog also shows extinguishers, hose, nozzles and system valves, connections and parts.

PLANT MAINTENANCE

Maintenance Vacuum Cleaner ... 402
Spencer Turbine Co. A highly versatile vacuum unit for dust removal and general maintenance is described and illustrated in this bulletin. The basic unit can be used as a portable machine or for a stationary system, can be supplied with an explosion proof motor for hazardous locations and with a special tank for wet pick-up.

Asphalt Tile Coatings 403
Gilbreth Co. A new self-polishing floor finish for asphalt tile is announced in this bulletin, which points out such features as resistance to streaking, bleeding, water, temperature changes, etc.

Care for Floors 404
S. C. Johnson & Son, Inc. Informative 24-page booklet offers long-range and day-to-day programs for maintaining all types of floors. Includes sections on floor safety; treatments of common floor faults such as loose tiles, yellowing, water-spotting, tackiness, etc.; and how to choose floor products.

Magnetic Pipeline Traps 405
Eriez Mfg. Co. This 4-page brochure shows how permanent magnetic pipeline traps assure product purity, reduce damage and maintenance, eliminate clog-ups, etc. by collecting fine iron and tramp iron in liquid processing equipment.

Machine Plastering 406
Zonolite Co. New booklet describes how machine application of vermiculite plaster

(Continued next page)

SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE.

READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

ADVERTISED PRODUCTS: Just insert the key number shown under each advertisement in the boxes below.

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FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

October, 1955

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Company Name _____

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MAIL POSTAGE PAID CARD

Free Bulletins (Cont'd)

and acoustical plastic speeds building construction and maintenance. Pictures show variety of applications.

GUARDS & TOOLS

Press Two-Hand Control 407
Searjeant Metal Products, Inc. An electro-solenoid two-hand control attachment for punch presses is described in this bulletin, which outlines safety features for operator and its own fail-safe design.

Mallets 408
LaPierre Sawyer Handle Co. Illustrated folder describes and gives size specifications for a line of wood mallets for tinners, plumbers, maintenance men, electrical, printing and other workers.

Explosive-Actuated Cable Cutters 409
Beckman & Whitley, Inc. Three designs of guillotine-type explosive-actuated cable cutters are described in a new leaflet which includes photographs of the three types for various sizes of cable and also scaled dimensional drawings and specifications.

DUST & FUME CONTROL

Portable Ventilator 410
Mine Safety Appliances Co. Bulletin illustrates and describes a portable blower or exhauster for use with or without a collapsible air duct in shipyards, railroads, public utilities, chemicals, refineries, steel plants, etc. to remove dust or fumes and to provide fresh air.

Paint Booth Filters 411
Research Products Corp. This 12-page booklet clearly outlines the purpose, use, installation, and servicing of paint over-spray arrestors for spray booths. Includes specifications, while drawings and photos show typical applications for various types of spray systems.

Lint Collector 412
Eastern Cyclone Conveyor System, Inc. New bulletin shows the simplified installation and operation of a lint collector system, available in 4 size capacities for any number of tumblers in textile manufacturing, upholstery & furniture production, etc.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protection Clothing
109	Safety Belts
110	Safety Gloves
111	Foot Protection
112	Anti-Slip Soles
113	Oil-Proof Soles
114	Welding Helmets
115	Welding Curtains
	FIRST AID AND PERSONAL HYGIENE
120	Protective Skin Cream
121	Skin Cleansers
122	Sanitary Drinking Facilities
123	Athlete's Foot Control
124	Salt Tablets
125	Noise Analysis & Control
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Resuscitators
131	Eye Wash Fountains
	DUST & FUME CONTROL
135	Portable Ventilator
136	Dust & Fume Collectors
137	Carbon Monoxide Control

Key Number	Subject
	FIRE PROTECTION
140	Fire Extinguishers
141	Safety Cans
142	Extinguishing Ashtray
143	Safer Solvents
144	Degreasing Machines
145	Combustion Safeguards
146	Flammable Liquid Pumps
147	Fire Retardants
	LIGHTING & ELECTRICAL EQUIPMENT
150	Alarms & Warning Lights
151	Explosion-Proof Lights
152	Electrical Insulation Tester
153	Fluorescent Lamp Guards
	FLOOR & BUILDING MAINTENANCE
160	Anti-Slip Floors & Mats
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Cleaning Machines
164	Oil & Grease Absorbents
165	Paints
	LADDERS & SCAFFOLDS
170	Ladders & Safety Devices
171	Scaffolds
172	Work Platforms
	GUARDS
175	Machine Guards
176	Power Press Feeders
	EDUCATIONAL AIDS
180	Safety Signs
181	Aisle Marking Equipment
182	Safety Awards & Emblems
183	Employee Safety Guide

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ALFRED M. BEST COMPANY, INC.
75 FULTON STREET
NEW YORK 38, N. Y.

Service Dept.

READER'S FREE INQUIRY CARD

for further data

on

ADVERTISED PRODUCTS,

NEW PRODUCTS,

FREE BULLETINS & CATALOGS

WHAT'S YOUR PROBLEM?

Terminal Management

Penn State's Institute of Public Safety has announced a new practical Efficient Terminal Management course, to be offered for the first time on its campus, October 11–13. The course is intended for motor freight terminal managers, dispatchers, warehouse foremen, and others charged with sound, effective terminal operations. Specialists from the trucking industry, as well as national and state organizations, will join staff members from the University in conducting the sessions.

Major Topics

Major topics to be covered include functions in terminal management, qualifications of a good terminal manager, how to select good terminal employees, all types of training programs, principles of supervision and management, interest and morale building, and standards as developed through time and motion study.

Each person attending all sessions and otherwise fulfilling course requirements will receive a certificate for having completed the course. For further information, write: Professor Amos E. Neyhart, Administrative Head, Institute of Public Safety, University Park, Pennsylvania.

HELP WANTED

Chemical Safety Engineer

Technically trained Safety Engineer with chemical plant experience wanted to head up safety, fire protection, and plant security in heavy chemical plant in West Virginia. Fine opportunity to exercise initiative and organizing ability, with free hand to do what's needed. Please state experience and desired salary range in reply, addressed to: Box SCWV, c/o Safety Maintenance, 75 Fulton St., New York 38, N. Y.

Safety and Special Purpose

Plain or Reflectorized

SIGNS for EVERY NEED!

SAFETY FIRST — BE — CAREFUL
NOTICE THESE DOORS MUST BE KEPT CLOSED
THINK ACCIDENTS ARE AVOIDABLE FORGET THE ALIBI.
BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
HELP KEEP THIS PLACE CLEAN
EXIT
DANGER — NO — SMOKING
WARNING CURRENT —ON—
CAUTION KEEP AISLES CLEAR
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STOP
MEN WORKING
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W. SOWELL ST.

No matter what your sign requirements may be, you can depend on Sargent-Sowell! We are nationally known for our dependability and quality, and we maintain a complete inventory of more than 5,700 standard Industrial, Construction, Safety, Municipal, and Plastic signs.

All orders are processed the day they are received . . . no waiting! You get your signs when you want them.

What's more, you'll find our prices represent genuine savings. Write for our new full color illustrated folder today.

Immediate Delivery!

SARGENT-SOWELL

"Satisfaction Guaranteed or Your Money Refunded"

P. O. Box 1176 Grand Prairie, Texas

(For details, use Key # K-62 on card on page 85)

How Do You Look at an Accident?

These problems test your ability to judge accident responsibility based on modern defensive driving techniques. They have been devised by Donald S. Buck, safety director, U. S. Army Transportation Corps. Assume that each report is based on a true accident; that each driver's statement is true and complete as given. Decide in each case whether the driver caused the accident or was victim. Remember that you are not deciding who is at fault.

Case No. 9—Driver's Statement

"I pulled up to the crossing. There was no stop sign. I came almost to a full stop, looked in both directions. There was a perfectly clear view each way, and no one was coming. I shifted into second and started on across, when this other car shot out of nowhere, going like a streak, horn blowing, and slid into me! He must have been traveling very fast, since he skidded 80 feet."

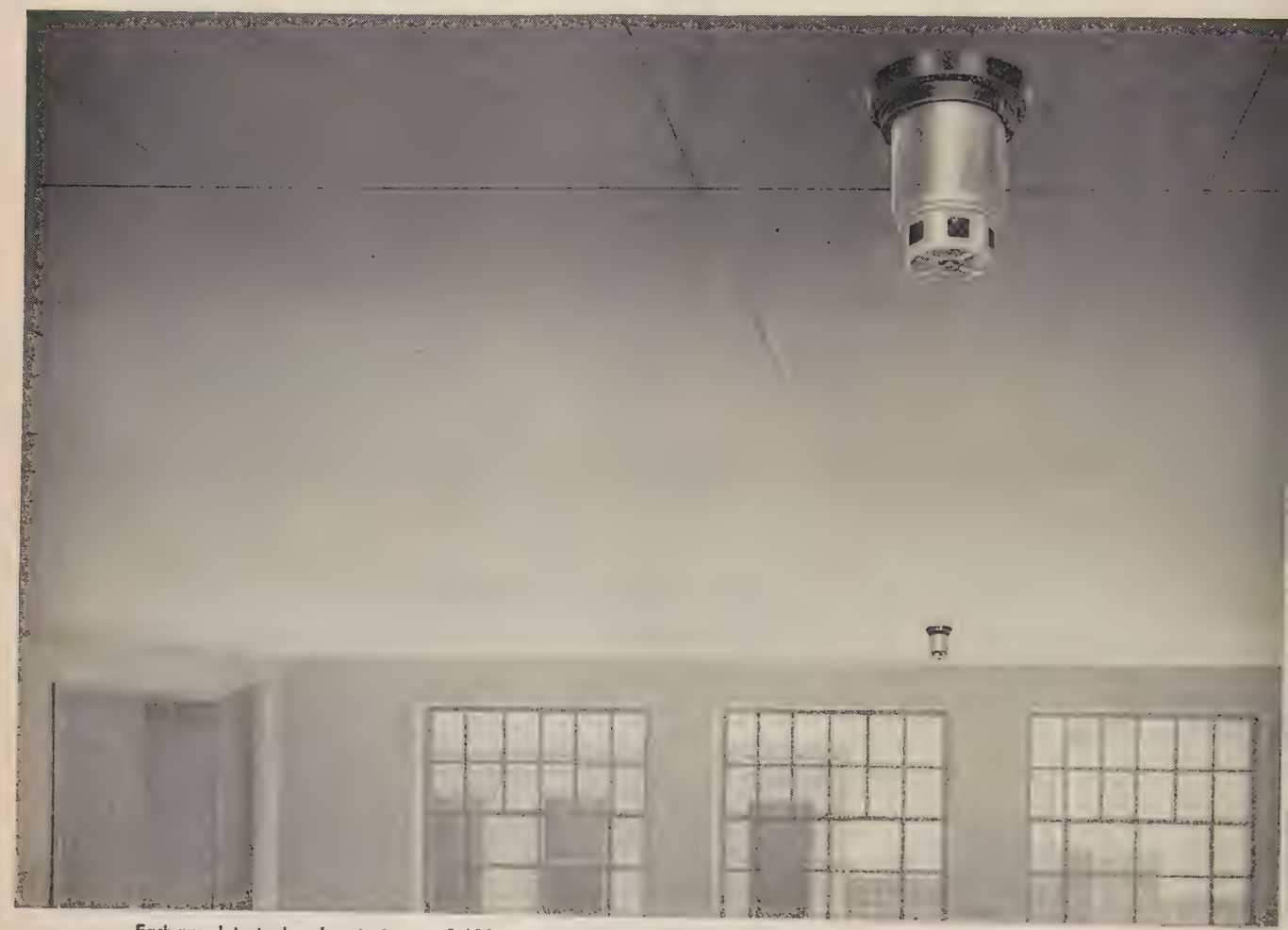
Case No. 10—Driver's Statement

"While driving on the street, I started to turn a right corner. I had to start fairly wide to make the right turn into it. I gave an arm signal for right turn and started to turn at about 20 mph, when this other guy caused the accident by trying to pass me on the right side! The police arrested him for improper passing. He obviously caused the accident."

Answers on page 102

New, radio-active, automatic fire guard!

C-O-TWO PRE-DETECTOR SYSTEM



Each pre-detector head protects up to 3,600 square feet of area... harmless radio-active element utilizing ionization chamber principle quickly detects all forms of fire... requires only simple two-wire circuit and insignificant wall space for controls.

This completely new and positive means of spotting fire is just what you've always needed and wanted . . . detects in the earliest stage, invisible combustion gases, visible smoke, slow smoldering, as well as open flame. The C-O-TWO Pre-Detector System is simple to install, extremely economical to maintain and doesn't depend on thick smoke or heat for actuation.

As many pre-detector heads as necessary can be connected together in a single circuit and up to 16 separate circuits or spaces handled by one system. With a single circuit the pre-detector heads are connected directly to the fire indicating cabinet, while with multiple circuits the pre-detector heads are first connected to one or more space indicating cabinets capable of visually showing by number the exact location of the fire. Relays perform such functions as sounding alarms, closing fire doors, shutting down ventilation and releasing fire extinguishing systems.

The C-O-TWO Pre-Detector System has been subjected to extensive testing and carries Underwriters' Laboratories, Inc. listing, as well as Factory Mutual Laboratories approval. Proven pilot installations have been made in such diversified properties as a television station, an electric power company network analyzer room, a railroad signal tower, an airline flight training equipment room and the offices of an insurance company.

Don't take unnecessary chances any longer . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts about this new C-O-TWO Pre-Detector System today!

Pyrene

PYRENE — C-O-TWO

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Sales and Service in the Principal Cities of United States and Canada

C-O-TWO

COMPLETE FIRE PROTECTION

portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

(For details, use Key # K-63 on card on page 85)

The Fire Front

Industrial Fire Organization Guide

A new informative and advisory text on organizing for fire safety in modern industrial establishments has been published by the National Fire Protection Association. Designated NFPA No. 6-M, "A Guide for the Organization of Fire Safety in Modern Industrial Establishments," the publication outlines the recommended development of a fire safety organization on both the plant basis and multi-plant basis, and treats essentially the "fire safety" aspect of loss-prevention. While this text has been published in the format of an NFPA standard, it is only intended for informative and advisory purposes and not as a regulatory standard.

It is available in pamphlet form (18 pages—35 cents per copy) from the NFPA, 60 Batterymarch St., Boston, Mass.

Radiation and the Fireman

The International Association of Fire Chiefs has announced publication of its newly-revised study, "Radiation and Monitoring Fundamentals for the Fire Service."

When originally issued in 1952, this report was used by fire departments and other organizations in the United States and Canada for the study of defense against atomic warfare. In revising the original text, the IAFC has brought the problem of radiological hazards into their proper perspective, particularly in view of the importance of radioactive fall-out. Both the original and revised texts were written by IAFC's Committee on Radiological Hazards in Fire Fighting under the chairmanship of Mathew M. Braidech, research director of the National Board of Fire Underwriters.

According to Mr. Braidech, familiarity with the information which has been presented, together with its prudent application, will enable fire officers to protect their own personnel from the hazard of radioactivity and permit them to do their work without constantly checking with other monitoring units. Since the fire effects from atomic weapons constitute one of the most serious threats, early efforts in preventing the merging of a large number of scattered fires may forestall the formation of extensive mass fires and their accompanying death and destruction.

The new publication presents a review of elementary atomic physics and discusses the general features of a nuclear explosion with particular emphasis on blast, heat and radiation effects. Instruments and methods for detecting and measuring radioactivity as well as decontamination techniques and protective safeguards against contamination are discussed.

A list of selected reading references is offered for those who wish to study the various topics in greater detail. The appendix contains a list of nuclear explosions which have occurred and a complete transcript of the "Report by the United States Atomic Energy Commission on the Effects of High-Yield Nuclear Explosions."

July Losses Dip

Estimated fire losses in the United States during July amounted to $61,614,000, the National Board of Fire Underwriters has reported. This loss represents a decrease of 11 percent over losses of $69,532,000 reported for July, 1954, and a decrease of 13 percent from losses of $70,828,000 for last June (1955).

Losses for the first seven months of 1955 now total $531,371,000, an increase of 1.1 percent over the first seven months of 1954, when they amounted to $525,522,000. These estimated losses include an allowance for uninsured and unreported losses.

Fire Standard Pamphlets

A series of four new and revised fire safety standards has been published by the National Fire Protection Association, it was announced by Robert S. Moulton, Technical Secretary. Each of the standards is available in pamphlet form from the NFPA, 60 Batterymarch St., Boston. The series includes: No. 82, 82A "Standards for Incinerators, Rubbish Handling" (26 pages—35¢); No. 505 "Standards for the Use, Maintenance and Operation of Industrial Trucks" (12 pages—25¢); No. 10 "Standards for the Installation, Maintenance and Use of First Aid Fire Appliances" (70 pages—50¢); No. 220 "Standard Types of Building Construction" (5 pages—25¢).

NFPA standards, prepared by technical committees, representative of all interests concerned, provide guidance for the reduction of loss of life and property by fire. Although purely advisory, these standards are widely used as a basis for laws, ordinances and regulations issued by fire marshals and other authorities responsible for the public safety.

Safe Maintenance for . . .

PORTABLE FIRE EXTINGUISHERS

PART II This is the second of 3 installments of the *"Safety Code for Inspecting, Recharging and Maintaining Portable Fire Extinguishers"* prepared by and reprinted through the courtesy of the Fire Equipment Manufacturers' Association, Inc. The first installment appeared in the September issue, and the last will appear in November.

Scope and Purpose

The scope and purpose of this safety code are intended to insure proper inspecting, recharging and maintaining of portable fire extinguishers.

Application

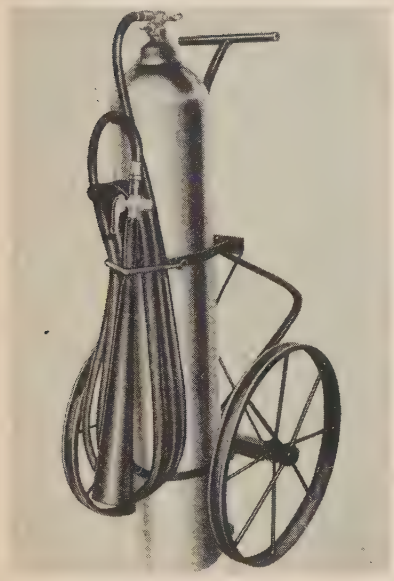
This safety code shall apply to all types of portable fire extinguishers.

Definitions

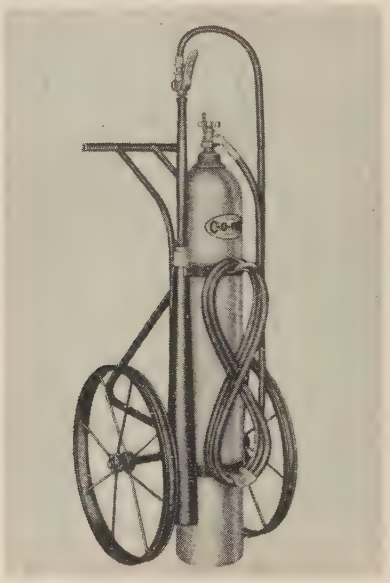
Where the word "shall" is used, that provision is intended to be mandatory.

Where the word "should" is used, that provision is intended to be advisory or recommended good practice.

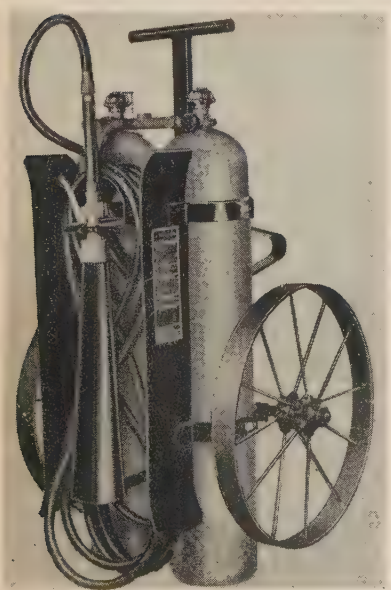
Wheeled - CO_2 Typ



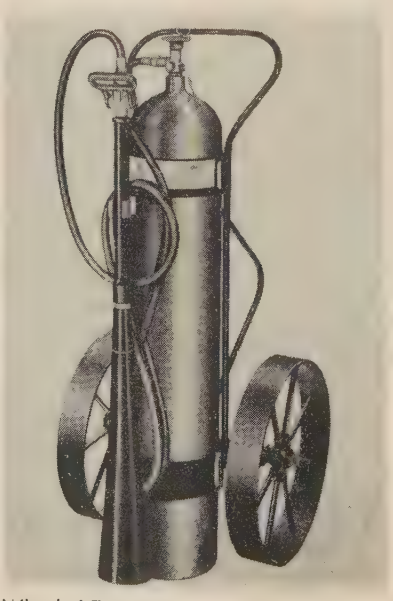
Wheeled Type—The Fyr-Fyter Co.



Wheeled Type—Pyrene—C-O-Two



Wheeled Type—American-LaFrance-Foamite Corp.



Wheeled Type—Walter Kidde & Co., Inc.

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, for tampering, mechanical damage and loss of weight. If the charge in a cylinder is 10 per cent less than normal, it shall be recharged to proper weight. Extinguishers which are empty and show no sign of being physically discharged, should be inspected for a ruptured safety disc, leaks in packing, or deterioration of the cylinder.

If an extinguisher has a ruptured safety disc, due to excessive pressure caused by high ambient temperature, the safety disc shall be replaced with one which is of the correct size and material for the particular extinguisher, as specified by the particular manufacturer of the extinguisher.

If the extinguisher has a defective seal in the discharge device, it should be discharged, repaired, recharged and tested for further leaks.

Extinguishers shall be recharged immediately after use.

After extinguisher is in use for five years, it shall be subjected to a hydrostatic pressure test to determine as fully as possible its fitness to withstand recharging for further shipment and use. This requirement covers only extinguishers to be recharged. It does not mean that an extinguisher must be discharged and tested every five years.

Hand Type—The Fyr-Fyter Co.

Hand Type—American-LaFrance-Foamite Corp.

Hand Type—Pyrene—C-O-Two

Hand

Extinguisher shall have its discharge device, or valve, removed and be subjected to a test by internal hydrostatic pressure in a water jacket to determine the expansion of the cylinder. This periodic test must include a visual internal and external examination.

The pressure required shall be 5/3 the service pressure of the cylinder and shall be applied for at least 30 seconds or as long as is deemed necessary to obtain complete expansion of the cylinder.

Cylinders which are hydrostatically tested and are found to have a permanent expansion in excess of 10 per cent of the total expansion, and/or one or all of the following defects appear shall be condemned:

(a) Loss of metal thickness either by localized pitting or large area corrosion, when such loss exceeds .005 inch for a cold drawn cylinder or 1/32 inch for a hot forged cylinder.

(b) Loose scaly material on the outside of the cylinder which freely breaks away upon hammering or jolting of the cylinder.

(c) Foreign deposits or inclusions adhering to the outside cylinder wall or bottom. If cylinder is found to be usable, the date of test shall be stamped under the original date of test on the dome of the cylinder.

Recharging

If extinguisher is to be discharged before recharging, the out-

Hand Type—Walter Kidde & Co., Inc.

Hand Type—The General Detroit Corp.
—The General Pacific Corp.

Hand Type—Stop-Fire, Inc.

Hand Type—Badger Fire Extinguisher Co.

Hand Pump—Walter Kidde & Co., Inc.

Hand Pump—The General Detroit Corp.
—The General Pacific Corp.

let shall be equipped with a suitable device to prevent recoil of the unit.

Extinguishers subjected to a hydrostatic pressure test or devalved shall have cylinders that are dry internally and free of rust or foreign material when recharged.

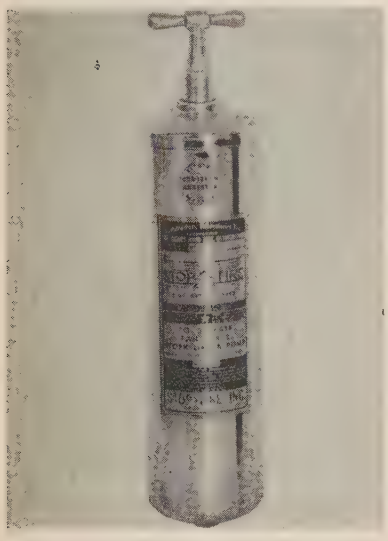
If valve has been removed from cylinder for any reason, when reassembling valve to cylinder, proper torque as specified by the manufacturer shall be applied.

The carbon dioxide supply may be either a cylinder or a liquefier. In both cases, the supply should contain dry carbon dioxide in a liquid state and be of a temperature of between 0° and 88° Fahrenheit.

The extinguisher should be placed on a scale to record the weight of the carbon dioxide entering it. The weight of the carbon dioxide charge shall not exceed the

(Continued at top of page 93)

Hand Pump - Vaporizing



Hand Pump—Stop-Fire, Inc.

Hand Pump—The Fyr-Fyter Co.

Hand Pump—Pyrene—C-O-Two

Hand Pump—American-LaFrance-
Foamite Corp.

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, to make sure that they have not been tampered with or removed from their designated places, to detect any injuries, and to see that they are full. Inspect hose, nozzle and gaskets and, if unserviceable, replace.

At least once yearly extinguishers shall be examined as to condition of pump or pressure and for deterioration or injuries due to misuse.

Extinguishers shall be kept full at all times and shall be refilled immediately after use.

Test the direct acting pump type by moving the pump handle several in and out strokes. Vaporizing liquid ejected in testing may be discharged into a clean, dry glass receptacle. Pour the ejected liquid back into the extinguisher, using a clean, dry funnel. Test continuous stream type extinguishers by pumping up pressure and ejecting vaporizing liquid in both up and down and around-the-clock positions.

Enough vaporizing liquid shall be added to bring it up to the required level.

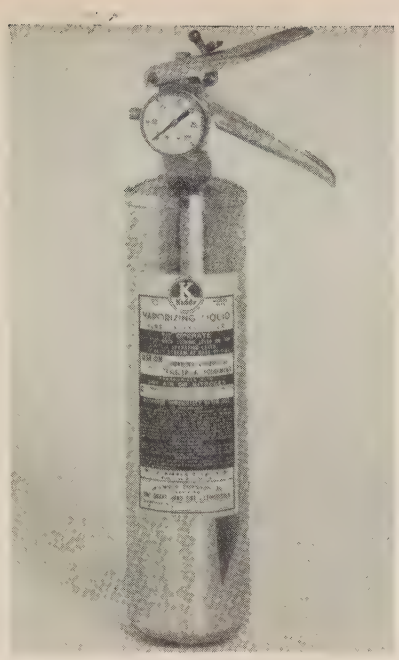
Test the stored pressure type

weight of the carbon dioxide charge which is permanently marked on the extinguisher.

After cylinder is fully charged, it shall be placed under water and observed until certain that there is no leakage. After leakage test, all traces of water shall be removed. If valve requires repair, unit shall be discharged before proceeding.

Recharging work shall be done under capable supervision, and after installation of wire and lead seal, recharge date shall be recorded on a card which shall be attached to the extinguisher.

Extinguisher should not be located in temperatures in excess of 130° Fahrenheit as this may cause rupture of the safety disc due to excessive pressure. If the ambient temperature is expected to exceed 130° Fahrenheit the extinguisher shall be undercharged in accordance with the recommendations of the particular manufacturer.



Stored Pressure—Walter Kidde & Co., Inc.

Stored Pressure—The Fyr-Fyter Co.

Liquid - Stored Pressure

extinguisher by discharging a small amount of vaporizing liquid to atmosphere. Before refilling a single chamber pressure type extinguisher, the remaining pressure shall be released by inverting the extinguisher and opening the operating valve. The vaporizing liquid ejected shall be replaced and the extinguisher shall be filled to its rated capacity. Press nozzle to air hose. Shake extinguisher. Add more air until gauge remains at required pressure.

If an extinguisher of the stored pressure type shows evidence of corrosion or mechanical injury, it may be unsafe for further use and should be returned to the manufacturer for examination.

Stored Pressure—The General Detroit Corp.—The General Pacific Corp.

Stored Pressure—Pyrene—C-O-Two

Stored Pressure—Stop-Fire, Inc.

Stored Pressure—American-LaFrance-Foamite Corp.

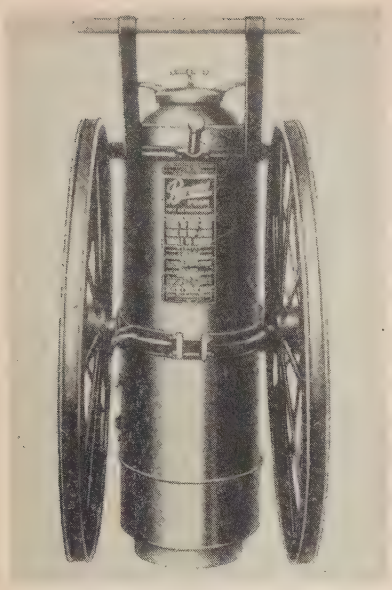
Recharging

Follow the manufacturer's directions on the instruction name plate.

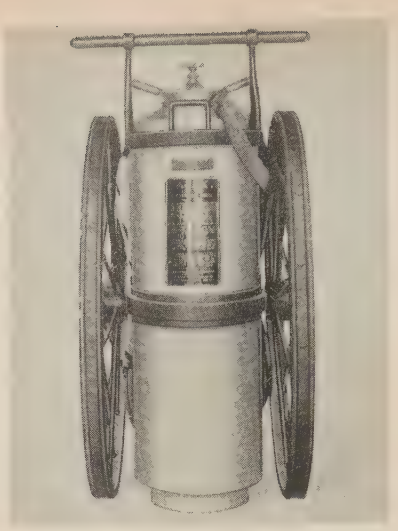
Test extinguishers in accordance with the procedure as outlined under Inspection and Maintenance.

Water shall not be used in vaporizing liquid type extinguishers for test or for any other purpose.

Vaporizing liquid other than that furnished by the manufacturer

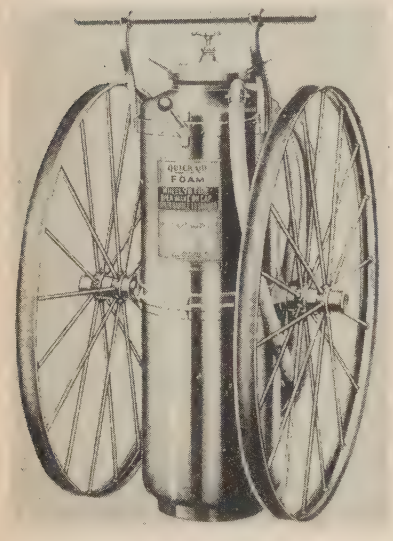


Wheeled Type—Pyrene—C-O-Two

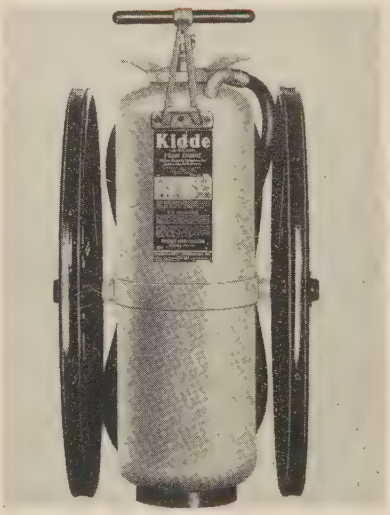


Wheeled Type—Safety Fire Extinguisher Co.

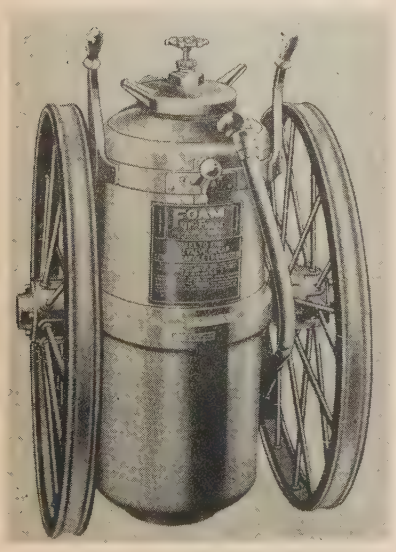
Wheeled -



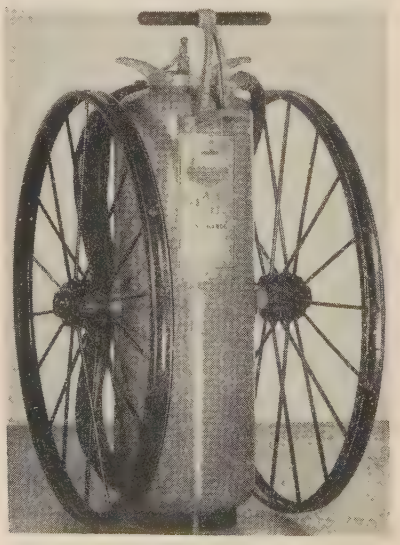
Wheeled Type—The General Detroit Corp.—The General Pacific Corp.



Wheeled Type—Walter Kidde & Co., Inc.



Wheeled Type—The Fyr-Fyter Co.



Wheeled Tyne—American-LaFrance-Foamite Corp.

should not be used in these extinguishers, because it is liable to render the extinguisher inoperative or make it dangerous for use.

Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

Chemical Foa

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, to make sure that they have not been tampered with or removed from their designated places, to detect any injuries, and to see that they are not empty, as well as to see that the orifice of the hose nozzle is not clogged. Examine extinguisher for physical damage to shell or seams. If extinguisher shows evidence of mechanical damage, corrosion or distortion of the shell due to freezing temperatures or from other causes, it may be unsafe for further use and shall be subjected to a hydrostatic pressure test.

Chemical foam type extinguishers shall be recharged annually as well as immediately after use and must be protected from freezing temperatures.

Every five years extinguishers which have been in service shall be subjected to a hydrostatic pressure test to determine that they are still capable of safely withstanding the pressures which may be generated during operation.

Hydrostatic Pressure Test

Pressure shall be applied at a rate-of-rise to reach 300 pounds per square inch in approximately one minute.

Pressure of not less than 300 pounds per square inch and not more than 350 pounds shall be applied to hand types and a pressure of 400 pounds to wheeled types.

The extinguisher should be checked for leakage, distortion, or other signs of failure.

(Continued on page 96)

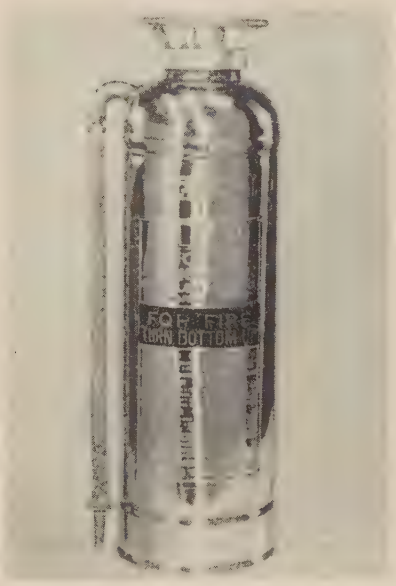
Hand Type—Badger Fire Extinguisher Co.

Hand

Hand Type—Pyrene—C-O-Two

Hand Type—Elkhart Brass Mfg. Co., Inc.

Hand Type—American-LaFrance-Foamite Corp.



Hand Type—W. D. Allen Mfg. Co.

Hand Type—The Fyr-Fyter Co.

Hand Type—Walter Kidde & Co., Inc.

Hand Type—The General Detroit Corp.
—The General Pacific Corp.

Hand Type—Stop-Fire, Inc.

Chemical Foam
(Continued)

Pressure shall be held for one minute, after which pressure shall be released.

Any extinguisher which shows leakage, distortion, or other signs of weakness should be mutilated to the point where it could not be placed back in service, and then scrapped.

Extinguishers which do not show any of the faults noted may be recharged and returned to normal service.

Recharging

Thoroughly clean extinguisher interior and all parts with warm water. Run water through hose and nozzle, making sure there is no obstruction in either. Do not use rags, waste or anything which might possibly clog nozzle or screen.

Examine extinguisher head to make sure the threads are in good condition. Head should be held by four full threads. If charging more than one extinguisher at a time, the head should be replaced on the same extinguisher from which it was removed.

Inspect hose, head gasket, inner chamber and loose stopple. If unserviceable, replace.

Recharges other than those furnished by the manufacturer should not be used in these extinguishers, because they may be compounded of substandard ingredients, and in excess of or deficient in quantity.

The units of the chemical foam charge should be mixed in separate containers in accordance with the instructions on the recharge package.

All solution in both the inner chamber and outer chamber should be thoroughly dissolved before placing in the extinguisher.

Solution level should never be above the water mark on the inside of the extinguisher. Solution in inner chamber should be kept at the water mark stamped on this part.

Replace loose stopple and place inner chamber in extinguisher. Replace head, screwing down tightly.

Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

Correction

In Part 1, published in the September issue, some of the material on the recharging of cartridge-operated water extinguishers was inadvertently printed as part of the directions for recharging the pump-tank water extinguisher. This incorrectly placed material consists of the last six paragraphs at the top of page 38 in the September issue. To give readers complete guidance in the safe maintenance of the cartridge-operated water extinguisher, we are reprinting below the entire text on the cartridge-operated type, including the paragraphs previously omitted from that section.

Inspection and Maintenance

Extinguishers shall be examined at regular intervals, i.e. several times a year, to make sure that they have not been tampered with or removed from their designated places, to detect any injuries, and to see that they are not empty, as well as to see that the orifice of the hose nozzle is not clogged. Examine extinguisher for physical damage to shell or seams. If extinguisher shows evidence of mechanical damage, corrosion or distortion of the shell due to freezing temperatures or from other causes, it may be unsafe for further use and shall be subjected to a hydrostatic pressure test.

While water type extinguishers do not require annual recharging, they should be inspected to assure that the water level is up to the proper mark. Extinguishers must be recharged immediately after use and must be protected from freezing temperatures.

Cartridges shall be removed and examined. All carbon dioxide pressure cartridges shall be weighed on an accurate scale to detect loss of carbon dioxide by leakage, and a new cartridge of the same make being used to replace any which shows a loss of ½ ounce or more from the original weight stamped on it.

Every five years extinguishers which have been in service shall be subjected to a hydrostatic pressure test to determine that they are still capable of safely withstanding the pressures which may be generated during operation.

Hydrostatic Pressure Test

Pressure shall be applied at a rate-of-rise to reach 300 pounds per square inch in approximately one minute.

Pressure of not less than 300 pounds per square inch and not more than 350 pounds shall be applied to hand types and a pressure of 400 pounds to wheeled types.

The extinguisher should be checked for leakage, distortion, or other signs of failure.

Pressure shall be held for one minute, after which pressure shall be released.

Any extinguisher which shows leakage, distortion, or other signs of weakness should be mutilated to the point where it could not be placed back in service, and then scrapped.

Extinguishers which do not show any of the faults noted may be recharged and returned to normal service.

Recharging

Thoroughly clean extinguisher interior and all parts with warm water. Run water through hose and nozzle, making sure there is no obstruction in either. Do not use rags, waste or anything which might possibly clog nozzle or screen.

Examine extinguisher head to make sure the threads are in good condition. Head should be held by four full threads. If charging more than one extinguisher at a time, the head should be replaced on the same extinguisher from which it was removed .

Inspect hose, head gasket and cartridge. If unserviceable, replace.

Check cartridge puncturing mechanism to be sure it is undamaged. If unsatisfactory replace mechanism, if removable, or replace complete head.

Extinguisher shall be filled with water to water mark on inside of shell. Do not fill above this mark.

Replace fully charged cartridge furnished by the manufacturer, and screw head tightly on extinguisher.

Recharging work shall be done under capable supervision and date of recharging and signature of the person who performed it put on the tag attached to each extinguisher.

Material appearing in this section is published as information for our readers and is not intended to imply endorsement or guarantee by SAFETY MAINTENANCE.

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE

KILN COOLING FANS

(Use Key # 626 on Inquiry Card on page 85)

RUGGED and powerful kiln-cooling fans that deliver a large volume of air at high velocity are available from F. R. Hannon & Sons. The portable units are made in two models: Hanco Pedestal Base (Type S), and Wheeled (Type KW). When directed into hot kilns, they drive out gases and greatly speed cooling. They also deliver fresh, cool air so that unloaders can work with greater comfort and safety.

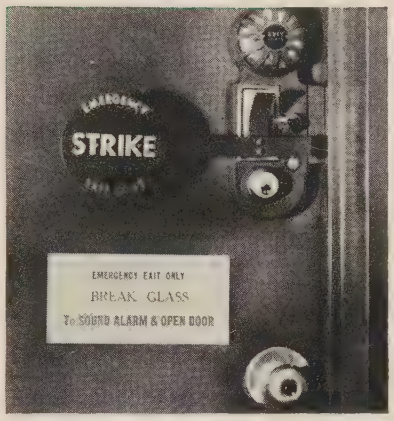
The large fans are easily moved and can operate in any position. They are weatherproof, built for severe service and have fully enclosed motors. The pedestal type is available with 24 or 36 inch fan blade diameters; and the wheeled type in the larger size.

INSECTICIDE FOG GENERATOR

(Use Key # 627 on Inquiry Card on page 85)

A POWERFUL new insect-killing weapon that expels a penetrating fog has been introduced by Silver Creek Precision Corp. Weighing nine pounds and equipped with a detachable stand, the portable Microsol fog generator has a built-in fan which rotates at 19,000 r.p.m. It converts any insecticide into micron-size particles capable of covering 64,000 square feet in 15 minutes.

It is effective for home, store, factory, farm and institutional use. Any insecticide can be poured into the leak proof tank. The insecticide is sucked into the stainless steel fan and dispersed in a fog of particles.



FIRE DOOR EXIT LOCK

(Use Key # 628 on Inquiry Card on page 85)

STORE AND factory executives and warehousemen will be able to save estimated millions of dollars lost by pilferage through unlocked, unguarded fire and emergency exit doors. Use of the "Fire Exit Lock and Alarm System," which is made by Exit Lock Co. and carries the seal of Underwriters' Laboratories, Inc., has been authorized for use by the New York City Board of Standards and Appeals, the Uniform Building Code, Office of the Secretary of Defense, Central Intelligence Agency in addition to insurance safety engineers and fire protection authorities.

The Fire Exit Lock, which attaches simply to any type of emergency door, rings a loud bell alarm if the door is opened without authorization or during an emergency. Personnel who are authorized to use these doors receive special keys enabling them to leave without sounding an alarm. Previously, fire, health, building and labor regulations required that emergency exits be unlocked from the inside at all times that buildings are occupied so that in case of fire, panic or other emergency, the building could be evacuated quickly. The use of padlocks on fire exist doors is not only dangerous but also in many areas illegal. But this new type of quick release lock provides protection to plant owners without endangering lives of personnel.

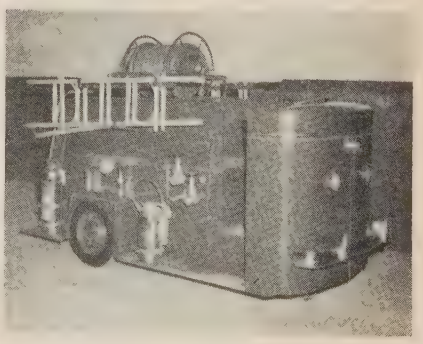
The Fire Exit Lock, constructed of aluminum and cast bronze, is entirely mechanical in operation and completely contains the alarm bell, lock and spring mechanism. A glass panel is broken by only 10 pounds pressure on a metal striker to release the lock and activate the bell. It is operated by a direct blow of the hand or, on doors with panic bars, indirectly through an extension to the bar.

IN-PLANT FIRE TRUCK

(Use Key # 629 on Inquiry Card on page 85)

A VERSATILE fire truck designed for use inside industrial plants is being manufactured by Gordon W. Osborne. Standard models carry a 150-gallon water supply, 100 feet of hose on a reel, 24-foot wooden ladders, five hand extinguishers of various types, hand lanterns, control panel, outside water connection and other fire-fighting accessories In addition to the water tank, or in place of it, the truck can be equipped with a dry chemical tank of 150, 350 or 500 lb. capacity for plants having large flammable liquid or electrical fire hazards.

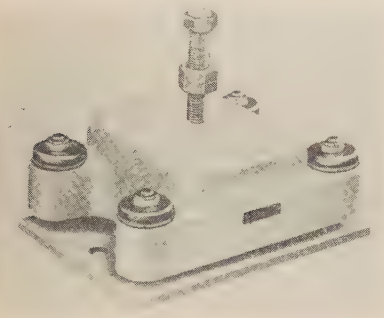
The unit is 48 inches wide, 114 inches long and has a turning radius of 64 inches for maneuverability in factory aisles. The truck has a 3-speed transmission and a speed of up to 15 mph. Other features are hydraulic brakes, sealed beam headlights, and 6-volt siren. Equipment can be modified to meet individual needs.



DRIPLESS BOTTLES FOR REAGENTS

(Use Key # 630 on Inquiry Card on page 85)

THE FIVE-PINT bottles of Du Pont C. P. Reagents are now equipped with a new plastic sleeve fitted on the necks, it is announced by the Du Pont Grasselli Chemicals Department. The dripless sleeve provides new safety for laboratory technicians by keeping the outside of bottles dry, protecting the hands, reducing the hazard of bottles slipping, preventing defacing of labels, and eliminating the need to wash the outside of the bottles. The reagents that are available in the new dripless bottles are: sulfuric acid, nitric acid, glacial acetic acid, hydrochloric acid and ammonium hydroxide.



VIBRATION MOUNTINGS

(Use Key # 631 on Inquiry Card on page 85)

A NEW LINE of heavy-duty general purpose steel spring vibration mountings has been developed by T. R. Finn & Company, Inc., specialists in shock and vibration control. These "Finnflex" Type SB Steel Spring Vibration Mountings are said to combine the strength of steel springs with unique damping, sway and thrust control elements for an unusual degree of isolation. A cast semi-steel housing contains helical steel springs, rubber thrust bumpers, nylon dampers, and a steel base plate with sway control assemblies. A dual-purpose bolt secures the mounting to the machine and also provides an easy means of leveling.

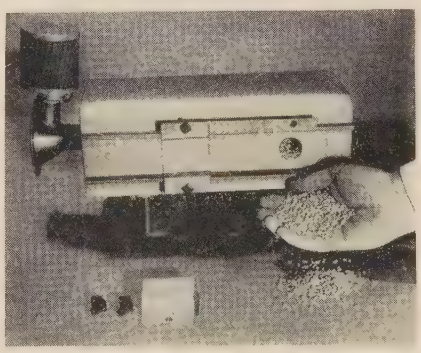
Nylon-lined, pre-compressed, cylindrical rubber bumpers absorb thrust in any horizontal direction. The nylon liners protect the rubber from abrasion and thus assure a constant degree of stiffness. Because of the low-friction characteristics of nylon, an unusually high degree of thrust control is obtained without any undue increase in vertical stiffness.

Optimum damping is also provided by the nylon liners which are pressed snugly around steel studs by the precompressed rubber thrust bumpers. All wear is taken up and proper adjustment is maintained automatically. This design provides stability without the need for external snubbing devices. The proper degree of sway control can be set by simple adjustment of the self-locking sway control nuts. The mountings are available with rubber-bottomed, non-walking baseplates which eliminate "creeping" or "walking" of the equipment and the need to lag the mountings to the floor. The line consists of 41 standard sizes, ranging in rated load capacity from 100 to 6500 pounds, with higher load capacities available.

BEAM SCAFFOLD

(Use Key # 632 on Inquiry Card on page 85)

AN ALL-METAL beam scaffold, or hanger, for suspending planking or catwalks from I-beams and girder-type structures, has been introduced by Bil-Jax, Inc. Gravity holds the scissors-hook safely in place on the beam. Used in sets of two or more, these units have stirrups which can handle planks or catwalks up to 14" wide. Units are equipped with fixtures for attaching standard Bil-Jax diagonal braces and guard rails. Ease of erecting, moving and removing, are features which make it suitable for jobs such as light fixture maintenance, ceiling washing and repair, where machinery or other obstructions make other type scaffolds impractical. It is built and designed to give continuous service for many years.



LEADED GAS EXHAUST PURIFIER

(Use Key # 633 on Inquiry Card on page 85)

A CATALYTIC answer to the engine exhaust problem of all gasoline-powered industrial trucks operating on leaded gasoline has been announced by Oxy-Catalyst, Inc. The new device, the Oxy-Muffler, is the first catalyst exhaust purifier that can be used on leaded gasoline—the most common type of fuel for in-plant trucks. It eliminates by catalytic burning as much as 90 percent or more of the carbon monoxide and most of the aldehyde and hydrocarbon fumes in engine exhausts of fork lift trucks, power sweepers, and other in-plant vehicles, permitting them to be operated with greater safety in enclosed plant areas. The device is designed as a direct replacement for a truck's acoustical muffler and can be quickly installed on any standard industrial vehicle without major or carburetor changes.

To produce an efficient catalytic purifier that would overcome the problem of deactivation of the catalyst by the lead in ordinary gasoline, Oxy-Catalyst developed a catalyst and muffler structure entirely different from those for unleaded gasoline and propane engines. The muffler has a number of chambers containing beds of tiny catalyst pellets. As the hot exhaust gases flow down through the pellet beds, they are burned by catalytic chemical action to a safe, odorless exhaust of carbon dioxide and water vapor. Burning occurs without flame. The catalyst bed just glows.

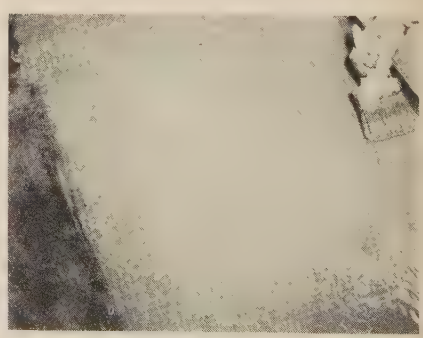
From a cold start, the Oxy-Muffler provides full rated clean-up after only a brief warm-up. Extended life tests indicate that it will provide up to 90 percent clean-up for at least 600 operating hours. When efficiency drops below the level desired, the catalyst pellets can quickly be removed and replaced with fresh ones. A pyrometer indicator gives the operator a continuous panelboard indication of catalyst efficiency and engine performance. The muffler comes in three basic sizes for engines with piston displacements ranging from 0–75, 76–150 and 151–230 cubic inches.

RADIUM SIGNS

(Use Key # 634 on Inquiry Card on page 85)

EXCLUSIVE RIGHTS to manufacture radioactive signs in the United States against German patents has been granted to the Bettinger Corporation. Made of radium oxide on porcelain enamel, the signs have particular application in industrial safety civil defense programs.

Since the radioactive material glows by itself, signs, plaques, or any type of information-bearing item can make use of the patented process for protection in blackouts, power failures and in any type of emergency. The glowing signs are impervious to all types of weather and atmospheric conditions, making them useful for streets, shelters and military installations. The amount of radiactive ingredient necessary is far below the toxic level, even when the signs are stored in large quantities. Other applications include: railroads, airports, merchant ships, docks, exit and emergency signs, plant safety markers, On and Off handles for machinery and switches.



PROTECTIVE COATING

(Use Key # 635 on Inquiry Card on page 85)

A NEOPRENE BASE protective coating, Corrocote 362, that guards surfaces of many materials against moisture, oils, chemical fume and splash, salt air and fungus corrosion, has been developed by Chemical Coatings & Engineering Co. Ap-

plied by roller, brush, spray or dip, the film dries quickly and self-vulcanizes to form a firm, long lasting, rubbery barrier. The addition of oils or plasticizers is not necessary, for the natural toughness and elasticity of the film eliminates failures caused by expansion, contraction and mechanical vibration. The cured film will not support combustion, resists sunlight, abrasion and weather, is a non-conductor, and effectively counteracts electrolytic corrosion. It has good adhesion to metal, concrete, wood and fabric. Coatings can be exposed to continuous air temperatures up to 250° F. and intermittently to 300° F.

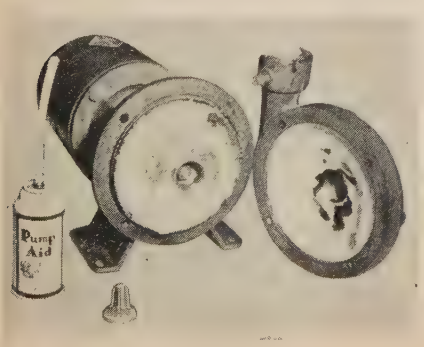
On walking surfaces—metal, wood, concrete—when sand is sprinkled while the coating is wet, the finished surface has excellent non-slip qualities. It is available in gray, black, aluminum and red. Applications include: exteriors of pipes, tanks, vats, ducts, structural steel; repair of conveyor belts; use on power transmission shafts, valve parts, bushings, air conditioning and ventilating equipment; lining for fans, impellers, ducts; protection for floors, duck boards and concrete against acid or caustic attack; electrical switch and terminal housings, wire, wire rope; marine gear, decks, rudders, canvas, etc.

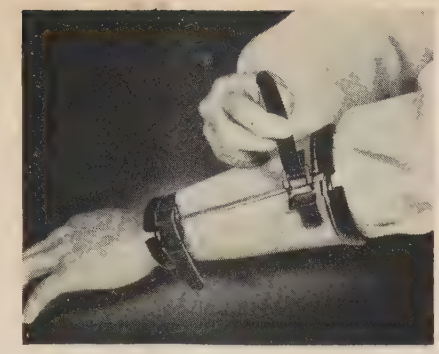
STICKING PREVENTIVE FOR PUMPS

(Use Key # 636 on Inquiry Card on page 85)

TO PREVENT sticking of seasonally operated pumps, such as are used for air conditioning water recirculating equipment, swimming pools, marine equipment, domestic water in resort areas, auxiliary pumps, etc., Garman Co., Inc. is producing a new product called "Pump-Aid." To protect against continued corrosion and consequent sticking, and other "down" period problems, the product is injected under pressure through the drain hole into the pump housing cavity immediately after draining pump. It is supplied in aeosol canister, using fluorinated hydrocarbon (Freon) type propellant, to apply a generous coating over all surfaces. Pump-Aid is also beneficial in preserving neoprene, rubber, and graphite type seals.

It will not freeze; will not evaporate; requires no special job preparation to use; adheres to surfaces permanently until flushed off; is water soluble—not necessary to drain when season starts; non-toxic—may be used for seasonally operated domestic pumps if properly flushed; and economical to use. According to the manufacturer, if a pump impeller turns freely at the time it is injected, it will start up again without sticking next season.



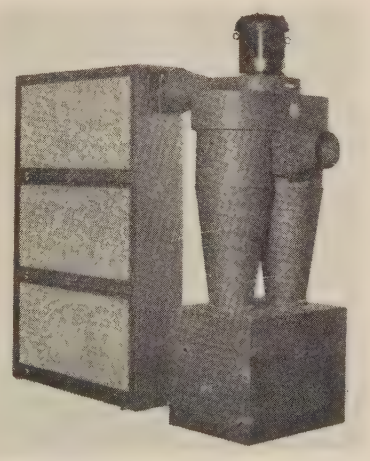


VENTILATED ARM GUARD

(Use Key # 637 on Inquiry Card on page 85)

A NEW lightweight arm protector has been brought out by Wheeler Protective Apparel, Inc. The new product features a wire mesh construction which allows free movement of air through to the arm of the wearer, yet also affords protection against flying objects, abrasion, and cutting by metal or glass sheets.

A simple lock slide closure is incorporated into the straps and permits full adjustment. The protector wraps fully around the arm. A hollow, tubular edge binding finishes off the wire cloth neatly and serves to keep the mesh away from the arm. Monel or electro-galvanized steel wire cloth is available and the unit can be sterilized. Applications for the new arm protector include handling of steel sheet, glass, protection of arms for meat cutters and other work where danger of arm injury is present.

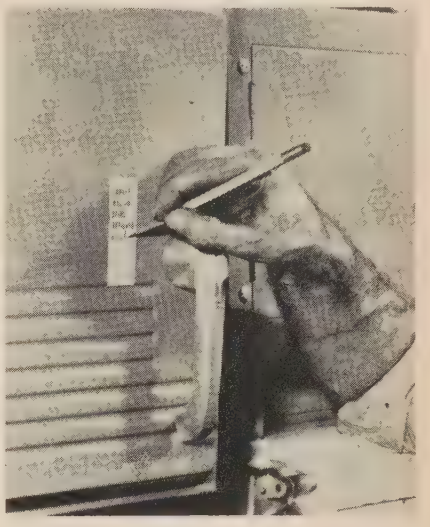


FILTER ATTACHMENT FOR DUST COLLECTOR

(Use Key # 638 on Inquiry Card on page 85)

HIGHLY EFFECTIVE filtration through its six "throw-away" filters is one of several features of the new after-filtering mechanism designed for the Torit model 219 FM-A cyclone-type dust collector by Torit Manufacturing Co. Used to collect dust, lint, chips, powders and fumes in industrial plants, the 219 FM-A recirculates filtered air back into the room, thus preventing heat loss during cold weather. Its 5 HP, 3450 RPM motor pulls 2100 cu. ft. of air per minute through the 8" inlet at a static pressure of 3.0" (water) and an air speed of more than a mile a minute.

Depending upon the particle's size and specific gravity, efficiency of the unit's centrifugal action varies from 75% to 95%; thick pads of glass insulation wool on each of two open surfaces on the after-filter frame remove any fine dust that has not already been trapped in the internal reservoir. There is no loss in the machine's initial performance from the filter addition. Each filter is held to the frame by wing nuts, and they may be quickly removed for replacement. Frame is 20-gauge steel with blue-gray wrinkle finish and measures 81" x 51" x 14".



DANGER AND WARNING TAPES

(Use Key # 639 on Inquiry Card on page 85)

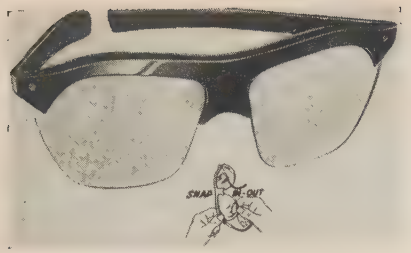
AMONG THE MANY uses for printed pressure sensitive tapes are included danger and warning signals. The tapes show up well, are easy to apply and can be removed without leaving a mark. They also are re-applicable to the same or other locations.

Two of the most popular tape materials are the so-called "flatback," and glossy colored acetate, according to Labelon Tape Co., Inc. Both materials can be printed clearly, and are available with a wide variety of imprinted standard warnings. The tapes will stick to wood, metal, glass, tile, plastic, or any smooth material that is clean and dry. The tapes are packaged in rolls up to approximately 2000" in length and in widths from ⅜" to 3". A variety of colors is available for both tapes and printing.

CORROSION INHIBITORS

(Use Key # 640 on Inquiry Card on page 85)

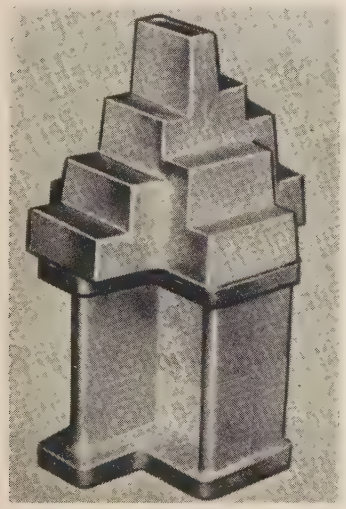
TWO NEW types of corrosion inhibitors are being manufactured and marketed by John B. Moore Corp., under an assignment from the originators, Princeton Paint Laboratories. Both of the inhibitors are effective on ferrous and non-ferrous metals. The "CI-103" is a film-former which dries tack-free in three to four minutes and may be removed easily by simple aromatic petroleum solvent wash. "CI-104" is neither a coating nor a film-former, but leaves an unusually durable deposit of mono-molecular dimension as a moisture barrier on the treated surface.



PLASTIC CLUB TEMPLES

(Use Key # 641 on Inquiry Card on page 85)

NEW EYE SAVERS Executive Safety Spectacles are now available with plastic Club Temples which fit and flatter almost every face, according to Watchemoket Optical Co., Inc. This provides a choice of Retrax or Club Temples. Executive Safety Spectacles also offer a choice of interchangeable shatterproof methacrylate lenses, guaranteed optically perfect. Choice of lenses include clear, for indoor hazardous areas; light green, for average sunlight; medium green, for bright sunlight; gold for night driving. Extreme light weight and perfect balance combined with the advantages of a universal nose bridge which rests on the nose without pressure or pinching provide featherlight wearing ease. Each pair of spectacles has its own leatherette case large enough to hold extra sets of lenses in individual protective pouches.

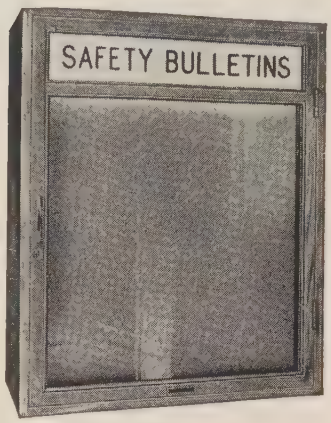


CHIP ABSORBING SET-UP BLOCKS

(Use Key # 642 on Inquiry Card on page 85)

THE DEVELOPMENT of new aluminum alloy multi-step set-up blocks which save machine set-up time and protect expensive machine tables from scratches and nicks is announced by Jergens Tool Specialty Co. Softer than the machine table, these new blocks absorb metal chips and even if dropped will not injure the machine table.

According to the manufacturer the blocks withstand great weight under clamping pressures and are designed for use on jib bores, boring mills, drill presses, milling machines, planers, etc. They hold work from zero to 3" and can be mounted on 3" high Jergens Risers to pyramid to any desired height. The tee-shape requires minimum table space and allows rotation of the set-up block to coincide with the sturdy tee base for maximum rigidity. The multi-step set-up block is positively locked to the riser by means of a male boss and female cavity.

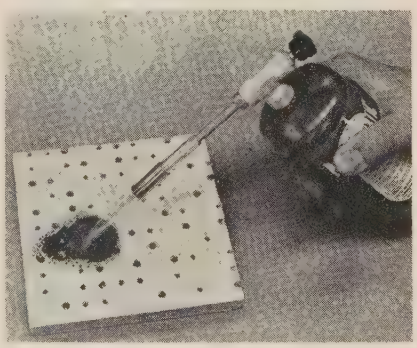


MAHOGANY BULLETIN BOARDS

(Use Key # 643 on Inquiry Card on page 85)

INDUSTRIAL Products Company has announced a line of bulletin boards constructed of Philippine mahogany and attractively finished in high gloss lacquer, for office and plant use, institutions, schools, hospitals and other locations.

Style No. 70 is of cabinet type construction, 28" x 35" x 4" inside depth, with cork posting surface, and hinged glass door to protect contents. Sign panel is of white opaque plastic and may be furnished with any desired wording. Concealed fluorescent tube provides light through sign panel and over the entire inner area. Flush type boards of the same materials are also available from stock. Special sizes, both types, to customer's specification.

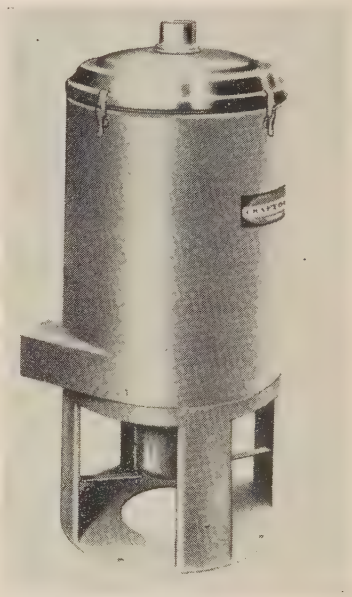


FIRE-RETARDANT PAINT

(Use Key # 644 on Inquiry Card on page 85)

A FIRE-RETARDANT paint which provides flame protection when applied to interior walls, ceilings and trim surfaces has been announced by The Warren Refining & Chemical Company. The coating, called Warco Duo-Tex, protects against flash fires by forming an insulating blanket which shields combustible surfaces from the flame. Like an ordinary paint, it may be brushed or sprayed on, dries to a rich flat finish, and is washable. It resists mildew and fungus growth and will maintain its fire-retardant quality with age.

Composed of an intumescent resin base, the paint will swell, char, and bubble, producing a protective charred ash which guards the surface from the flame. Available in white and twelve basic pastel shades, the coating carries the Underwriters' Laboratory seal and meets the fire-resistant demands of Federal Government Specification SSA-118A. It can be used on accoustical tile and may be recoated with any kind of interior paint without losing its protective quality.



DWARF DUST COLLECTOR

(Use Key # 645 on Inquiry Card on page 85)

CRAFTOOLS INC. announces a Dwarf Dust Collector Unit for application on small machines where dust presents a special problem, as in small shops, laboratories, tool rooms, etc. The unit handles 230 cu. ft. of air per minute and separates the dust so that the heavy particles are retained in an expansion chamber while fine dust is collected in a filter bag. An air outlet is furnished for cleaned air discharge to the outside atmosphere if required.

The unit is designed so that one or two machines can be connected with the collector. These Dust Units can be adapted to any machine, such as belts and disc sanders, circular saw tables, buffers and grinders, metal and wood band saws, routers, abrasive cut-offs, radial saws, milling machines, surface and tool grinders, tile and ceramic cut-offs, or packaging machines, by the use of a simple standard hood.

Attachments are available that convert the unit into a vacuum for maintaining and cleaning all machines in the shop. A set of casters are also available for making the unit mobile.

APPROVED PLASTIC PANELS

(Use Key # 646 on Inquiry Card on page 85)

FIBERGLASS-REINFORCED daylighting panels, listed by Underwriters' Laboratories Inc., are being manufactured by the Resolite Corporation, under the trade name of Fire-Snuf. The panels have a flame spread rating of below 75. This is equivalent to the Building Officials Conference of America classification of "slow burning" and means that they meet the safety requirements for most factories, schools, institutions and other coded areas.

Fire-Snuf panels are self-extinguishing and will not support combustion. They are molded of fiberglass and Hetron, a permanently self-extinguishing polyester resin. Under the heat of a blow torch the panels will ignite, but they extinguish themselves almost immediately upon removal of the source of heat and flame. The translucent panels can be used as skylights, sidewalls and partitions in industrial, commercial and institutional buildings where codes call for a flame spread rating of below 75 or where fire hazards are unusual. They are shatterproof and retain all other features of standard Resolite, including high strength, stability and load bearing characteristics. They are molded in flat sheets and in all standard building corrugations in lengths up to 13 feet and widths up to 42 inches.

METHANE INDICATOR

(Use Key # 647 on Inquiry Card on page 85)

NATIONAL Mine Service Company is the exclusive distributor in this country for the U. S. Bureau of Mines approved Riken Methane Indicator. Embodying the principles of optical projection in the determination of methane content in mine air, the instrument enables one without special training to make readings in less than a minute accurate to within one tenth of one percent. The direct-reading scale ranges from 0.0 percent to 6.0 percent.

An inexpensive, single-cell flashlight battery and bulb for illumination of the scale and a replaceable absorbent cartridge to remove moisture from the air sample are the only renewable items. No combustion of the gas sample on a hot wire—no recalibration—no dependence or connection with a cap lamp battery of varying voltage simplifies the operation and secures results comparable with highly-technical laboratory equipment. It weighs only 2½ pounds and comes in a serviceable leather case with shoulder strap.

PLASTIC SHIELD-GOGGLE

(Use Key # 648 on Inquiry Card on page 85)

A LIGHTWEIGHT plastic goggle that provides wide angle vision and an increased area of protection is announced by Pulmosan Safety Equipment Corp. Called the "Secureye Shield," the new goggle is designed to fit comfortably around the eyes, nose-bridge, upper face and temples. There are no seams or joints to obstruct vision and prescription glasses can easily be worn underneath.

Its rigid and tough construction affords full eye protection against flying particles. The transparent Lumarith lens, available in either clear or green, is rounded and sloped to deflect particles. An opaque green visor eliminates overhead glare. The exclusive foam rubber sweatband and the elastic headband are replaceable.

ADHESIVE NUMBERS AND LETTERS

(Use Key # 649 on Inquiry Card on page 85)

INDIVIDUAL, self-sticking Numbers and Letters, in six sizes from ½ to 5 inches high, mounted on handy dispenser cards, have been developed by the W. H. Brady Co. The Numbers and Letters are available in two colors: black on white and black on yellow; six sizes: ½", ¾", 1½", 2¼", 3½" and 5" high; the alphabet, numbers 0 through 9 and dashes.

They are made of Brady #B-500 All-Temperature impregnated cotton cloth with a temperature-resistant pressure-sensitive adhesive, mounted on handy dispenser cards which protect the adhesive until used. They will stick permanently to any clean, dry surface.

Brady Numbers and Letters were developed to fill the need for a simple, low cost method of marking bays, posts, shelter areas, fire extinguishers and other safety equipment. Signs and special safety messages can be put up in minutes in the office and shop for identification, safety and maintenance. Free samples available.

STAIR CLIMBER TRUCK

(Use Key # 650 on Inquiry Card on page 85)

THE FAIRBANKS CO. has introduced an all-steel "Stairmaster" Appliance Truck with five features that provide safer and easier handling of appliances of all types and sizes.

Greater protection for appliances is provided by the new belt tightener that has eliminated the use of buckles and substituted a simple automatic positive lock. Application of proper tension on belt is accomplished through hand wheel which also keeps the extra long belt neatly rolled out of the way. Three position adjustment of belt accommodates appliances of any height.

Protection of operator, up or down stairs, is provided by a new stair-climber device. It walks the appliances over the steps with no rubbing, rolling or sliding friction between the climber and the step. Rubber rockers of stair-climber are also tangent with wheel, eliminating hump or bump as truck is moved over stair. Rockers are a neutral color that will not mark the steps. The offset of stair-climber allows the operator to handle loads on stairs in a more upright position and at a better balance decreasing fatigue.

Tubular-steel frame is sheathed in non-marking rubber bumper stock and nose plate is felt-lined for added protection of appliances.

APPROVED SAFETY
guards for all
DANGEROUS MACHINES
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DUST COLLECTORS
for all dusts
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(Use Key # K-64 on Inquiry Card on page 85)

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It's a Life Saver

IT LOCKS—IT HOLDS

SAFETY DEVICE FOR LADDERS
Prevents death and injuries from falling.

Inexpensive: Easy to install. Clamps on ladder rung or structures with peg steps or framework etc. No welding or cutting.

Automatic: Positive. Will catch workman if he starts to fall even if unconscious.

Simple to operate. No upkeep. Requires no attention from climber.

Notched rail **hot dipped galvanized.** Entire equipment rust and corrosion proof.

In use throughout country and abroad for approximately 6 years.

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Answers to "How Do You Look at an Accident" on page 87

Now that you have passed judgment on these accidents, let's review the answer to see how well you made out. Don't be disturbed if you didn't get a perfect score. Very few safety men have! Each case should have been scored as a "preventable" accident.

9. Caused by our driver. This is a common occurrence, and our driver is quite sincere in stating that the other driver came "out of nowhere" going like a streak; however, the consequences demonstrated that the vehicle **was** coming. During the approach to the intersection, the other vehicle was obscured from view by our left corner post. The blind spot caused by the door post or corner post makes it imperative to check the deadly blind spot. And this is an explanation why a "full" stop is so vital for safety at required stops—it permits vehicles to emerge from the blind spot.

10. Caused by our driver. The technique of turning right was faulty on the part of our driver. The fact that the other vehicle attempted to pass on the right indicates that our vehicle either swerved out or started the turn from the wrong lane. This results from attempting to turn at a speed not commensurate with the angle of the corner. It is much easier to execute a sharp right turn at three or four miles an hour, than at 10 or 15. To attempt a right corner at 20 miles an hour requires a considerably larger arc than that afforded by the usual right-angled corner. Had our driver started his turn at a much slower speed, he could have "crowded" the right curb, discouraging anyone from passing on the right.

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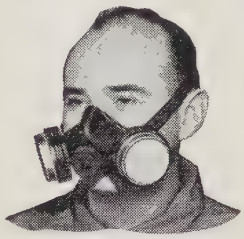
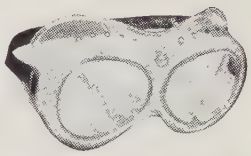


Approved Respirators



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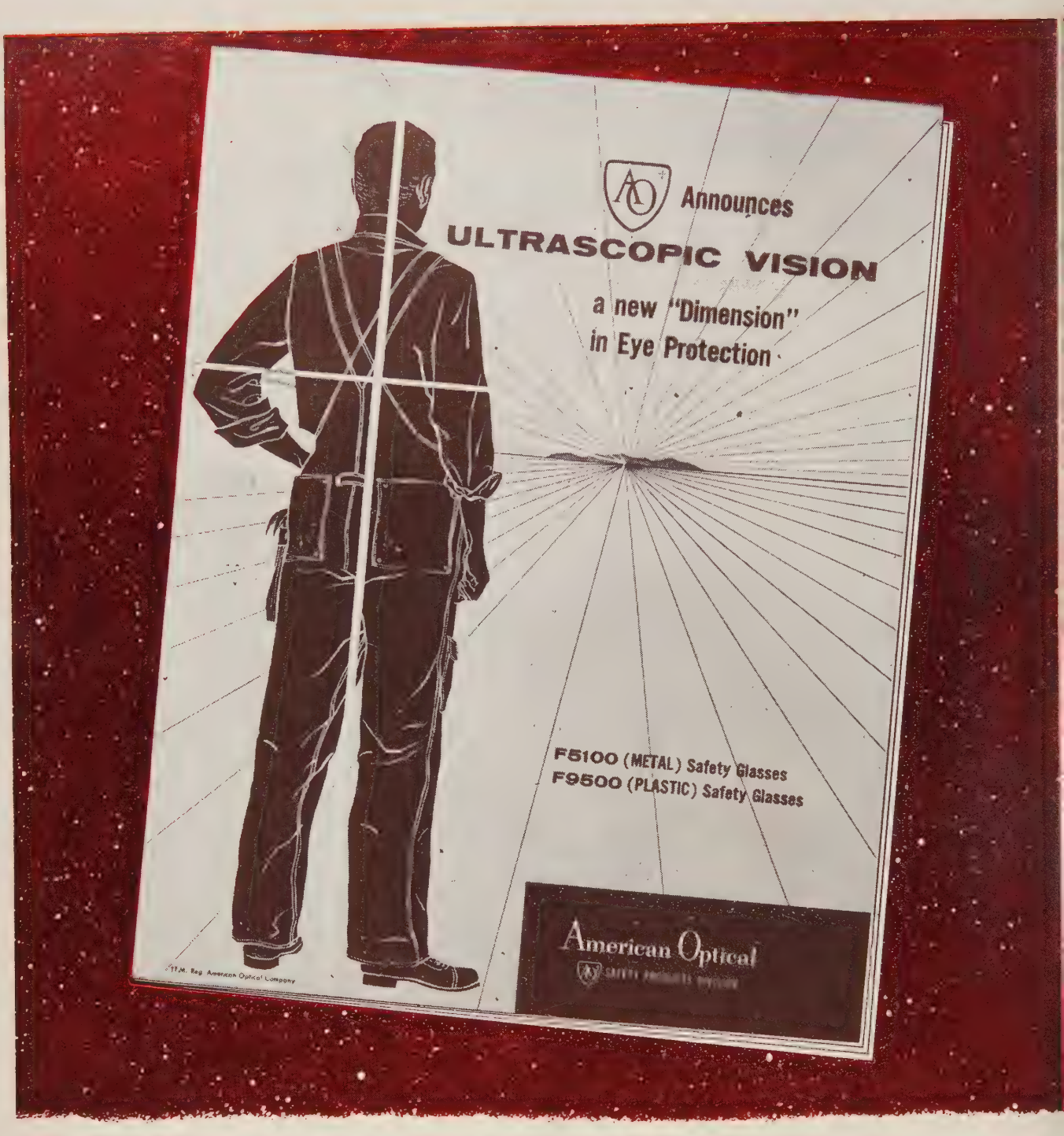

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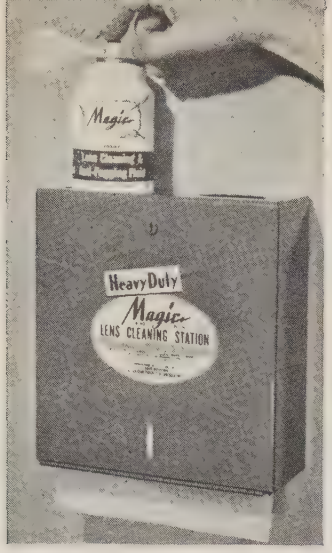

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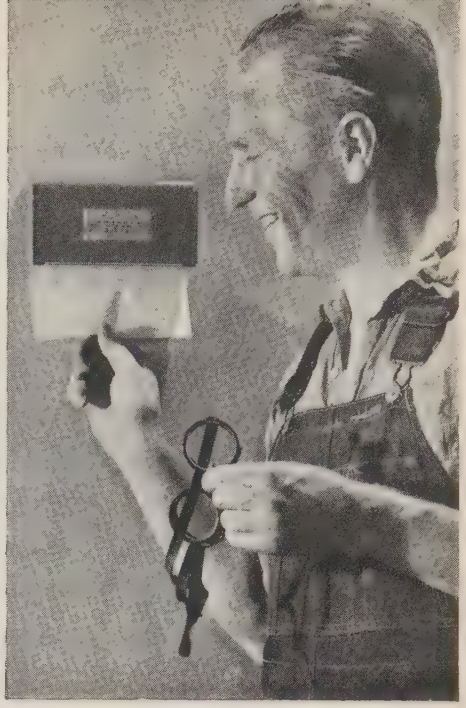
ON CONDITIONS



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(For details, use Key # L-2 on card on page 73)

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**203* *26 April, 1955*

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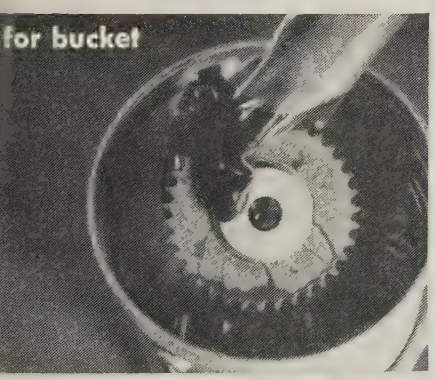

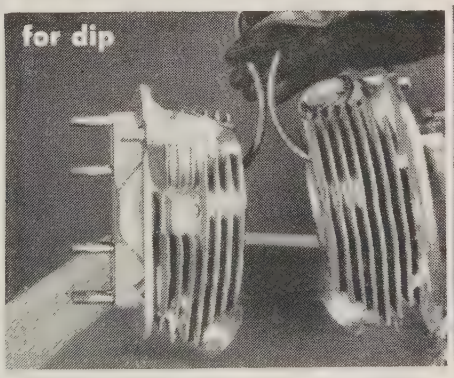

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You get enthusiastic safety cooperation instead of

tolerance... from every employee... every month.

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IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
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3
WAYS
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1 Make sure all guards are in place and working and wear the personal protective equipment your job requires
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Your Signature Here

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Your Safety News is designed to promote better employer-employee relations. Every item is carefully weighed from this viewpoint.

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(pages 2 and 3)

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Safety Maintenance and Production

formerly "SAFETY ENGINEERING"

Volume 110, Number 5 **November 1955**

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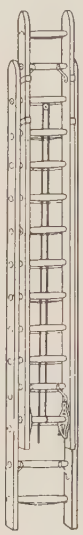

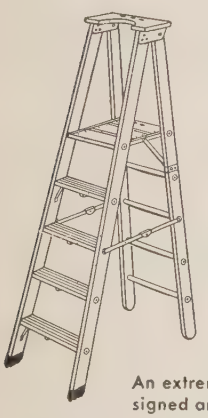

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(Use Key # L-4 on Inquiry Card on page 73)

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Kansas City, Mo. *November 14–18*

Eighty-third Annual Meeting of the American Public Health Association and related organizations (Municipal Auditorium). Dr. Reginald M. Atwater, executive secretary, American Public Health Association, Inc., 1790 Broadway, New York 19, N. Y.

New Orleans, La. *December 12–13*

Sixth Annual Louisiana Safety Association Conference. (Roosevelt Hotel). J. R. O'Donnell, Avondale Marine Ways, Inc., P. O. Box 1030, New Orleans, La.

Philadelphia, Pa. *January 23–26*

Seventh Annual Plant Maintenance & Engineering Show (Convention Hall). Clapp & Poliak, Inc., managers, 341 Madison Ave., New York 17, N. Y.

San Francisco, Calif. *February 2–3*

Sixth Annual California Statewide Meeting of the Governor's Industrial Safety Conference (Fairmont Hotel). Department of Industrial Relations, 965 Mission St. (Room 400), San Francisco, Calif.

Atlanta, Ga. *March 4–6*

Southern Safety Conference & Exposition (Biltmore Hotel). W. L. Groth, Executive Director, P. O. Box 8927, Richmond 25, Va.

Los Angeles, Calif. *March 19–21*

Third Annual Southern California Safety Congress & Exhibit (Ambassador Hotel). Greater Los Angeles Safety Council, 610 S. Main St., Los Angeles 14, Calif.

Klamath Falls, Ore. *April 5–7*

Forest Products Safety Conference. George Metzger, Secretary-Manager, c/o Willamette Valley Lumber Operators Association, Eugene, Oreg.

New York, N. Y. *April 16–20*

Twenty-sixth Annual Greater New York Safety Convention & Exposition (Hotel Statler). George E. Decker, chairman, Greater New York Safety Council, 60 E. 42nd St., New York 17, N. Y.

Washington, D. C. *May 14–16*

President's Conference on Occupational Safety.

Rochester, N. Y. *May 22–24*

First Genesee Valley Safety Conference and Exhibit (Rochester Chamber of Commerce Building) William H. Keeler, secretary-treasurer, Rochester Safety Council, 55 St. Paul St., Rochester 4, N. Y.

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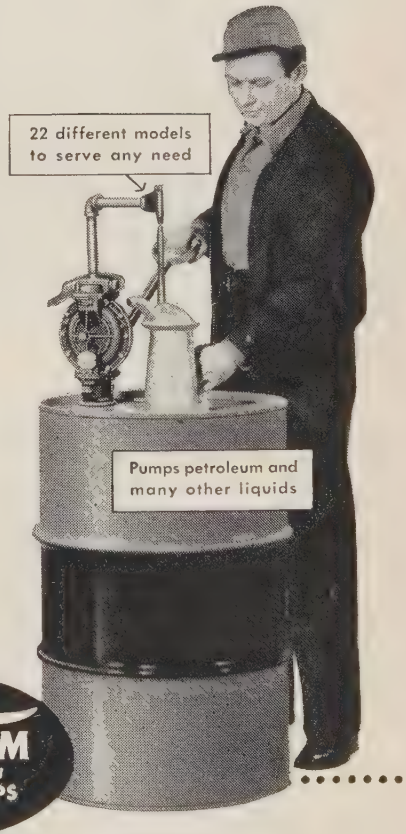

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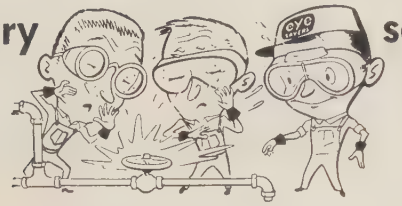

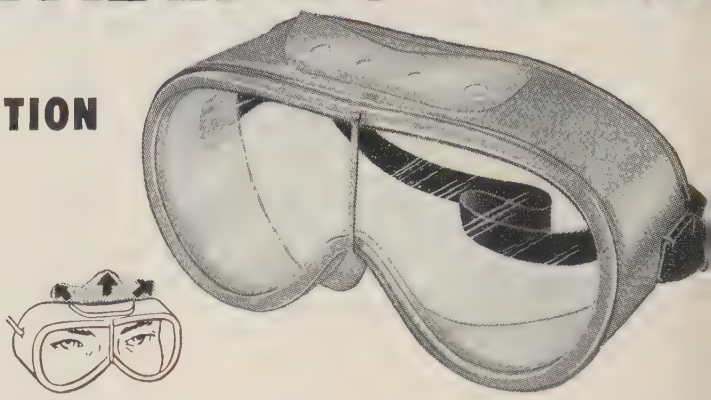

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COMFORTABLE • LIGHTWEIGHT • FORM-FITTING

- **Comfortable** . . . extra wide lens . . . large vinyl frame fits over all prescription frames.
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MODEL 440SV — clear frame **460SV** — green frame
Heavy Impact Goggles with replaceable optically perfect methacrylate lenses. Clear Lens (C) .125" thick.

Green Lens: Light (G2) Medium (G3) .080" thick.

MODEL 441SV — clear frame **461SV** — green frame
Average Impact Goggles with replaceable optically perfect acetate lenses.

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MODELS 490 or 491 — opaque black frames
Furnished with Stac-Vent only
Methacrylate Lenses: same as 440
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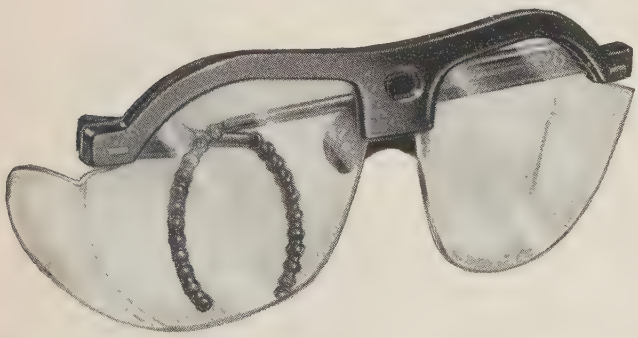

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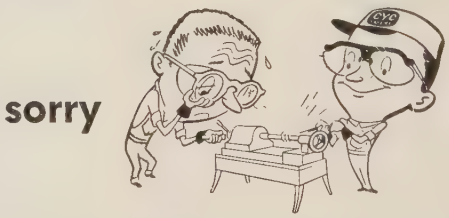

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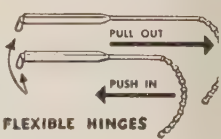
- **RETRAX** . . . One size fits every worker thanks to Adjustable Retrax Temples and Universal Nose Piece.



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MODEL 410 plastic club temples

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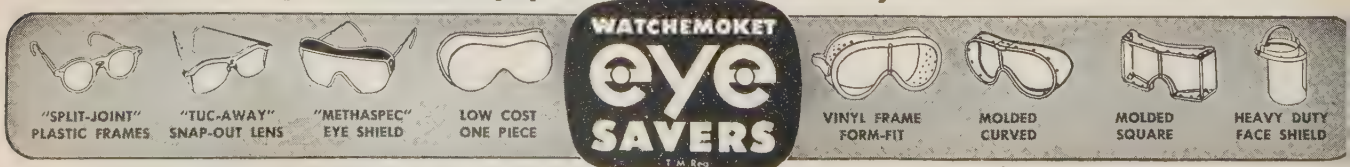


WATCHEMOKET OPTICAL CO., INC.

238 West Exchange St., PROVIDENCE 3, R. I. *In Canada: Levitt-Safety Limited, Toronto 10, Montreal 2*

(For details, use Key # L-6 on card on page 73)

Paperwork Piles Up A Safety Record!

ON MARCH 22, 1954, a Certificate of Merit Safety Award, one of the highest-ranking safety citations, was presented by Liberty Mutual Insurance Co. to Purolator Products, Inc., Rahway, N. J. pioneer manufacturer of automotive oil filters and other filtration equipment, for establishing an all-time record of 1,036,476 man hours worked without a loss-time accident within that organization.

A year previously, Purolator was unable to accumulate more than 300,000 man hours worked without experiencing a lost-time accident. Its frequency rate of injury was running more than twice as high as the national average for its particular industrial group.

The company's achievement in the relatively short period of one year in accomplishing such an outstanding safety record is one that bears important notice for all other industries beset with a similar safety problem.

Frequency Rate Analyzed

The safety program actually got underway in June, 1953, with the reorganization of its existing safety program. A careful analysis of the accident reports disclosed that the frequency rate of injury was 23–24, considerably more than twice as high as the national average for its particular group. (8–10). This alarming situation cried for immediate action and remedy.

Top management acted immediately. At a meeting attended by the President, Executive Vice President, Vice President in charge of Operations, Director of Industrial Relations, Treasurer, and Comptroller, the existing safety program was reviewed and analyzed. The first decision arrived at by this group was that the safety program needed an improved medical department under the direction of a competent doctor. This resulted in the immediate appointment of a physician to head up the Medical Department.

Safety policies were then formulated and the overall responsibility for the organization of the entire safety program was placed under the supervision of the Vice President in Charge of Operations.

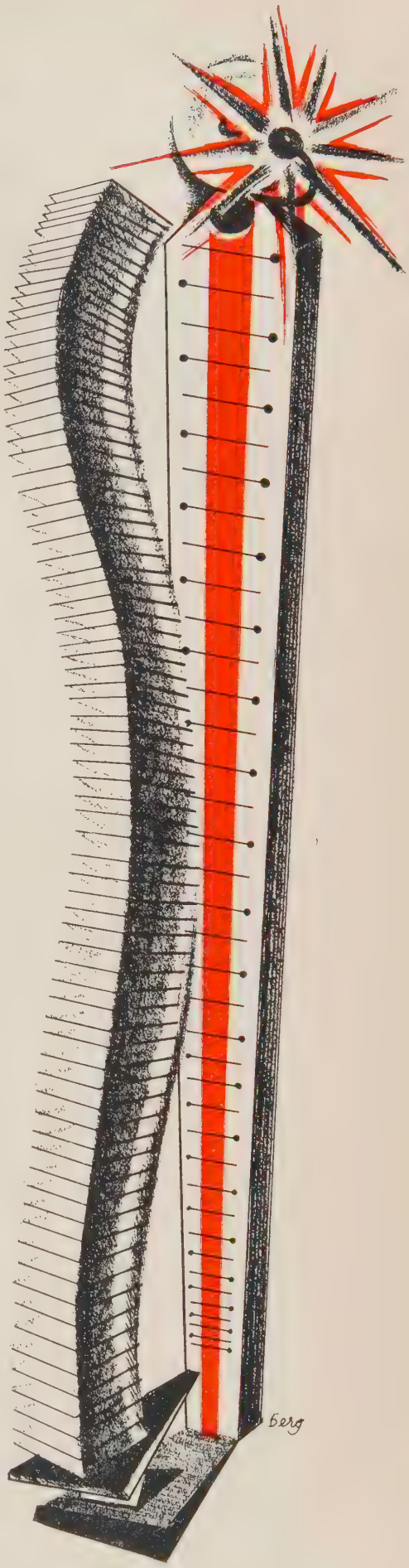
To make the employees aware of the fact that top management was behind the new safety program, a letter containing the policies established at the executives meeting was sent to each employee at his home address.

While the letter was going out, the Vice President in Charge of Operations called a meeting of the Quality Control Manager, the Assistant Factory Managers, the Director of Industrial Relations and the Safety Engineer. It was decided that the development of a comprehensive safety program could best be accomplished through committee action. This resulted in the establishment of a permanent committee called the Executive Accident Loss Prevention Committee under the permanent chairmanship of the Vice President in Charge of Operations.

Designs for Safety

First action of the group was to establish necessary subcommittees based on the organization structure. These were: (1) Department Heads Safety Committee, (2) Supervisor Safety Committee (line supervisors), (3) Employees Safety Committee (hourly and weekly salaried employees). A subcommittee of the Department Head Safety Committee is the Machine Design Safety Committee whose job it is to inspect designs of both new purchased equipment and that built in

(Continued on page 14)



REPORT ON ACCIDENT CHECK UP

Name of Employee John Doe Date 6-3-55

How accident occurred Lifting coil stock, weight 135 pounds, a distance of 21 inches.

(In every case, indicate below (with an X) your opinion as to the direct cause of the accident)

PHYSICAL CAUSES

____ Poor Housekeeping (misplaced material, etc.)
____ Lack of Proper Guards (mechanical or electrical)
____ Improper Apparel (goggles, shoes, loose clothes, etc.)
____ Defective Equipment (hand tools, ladders, etc.)
____ Defective Floors, Stairways, Ramps, etc.
____ Poor Working Conditions (light, ventilation, etc.)
X Not Otherwise Classed (describe)
Proper lifting equipment not available

PERSONAL CAUSES

____ Dangerous Practices (undue haste, chance taking, etc.)
____ Inability (inexperience, poor judgment, etc.)
____ Incomplete Knowledge of Job at Hand
X Disobeying Rules
____ Unfit (weak, easily fatigued, easily excited)
____ Not Otherwise Classed (describe)

Measures I have taken to prevent a similar accident Reviewing this particular accident with the supervisor, I concur with his recommendation to have installed a monorail and hoists. Nevertheless, this employee should not have lifted the coil stock without first notifying his supervisor that he needed help to perform the loading operation. Held discussion with supervisor and employee in the Press Room reviewing shop safety rules.

Signature John Jones, Safety Engineer

LP 806 PRINTED IN U.S.A.

REPORT OF ACCIDENT INVESTIGATION

THIS IS TO BE MADE OUT AND TURNED IN NOT LATER THAN THE DAY FOLLOWING THE ACCIDENT BY THE FOREMAN, OVERSEER, OR SUPERVISOR OF THE INJURED EMPLOYEE

(This form does not take the place of the regular accident report to be sent to the insurance carrier, or any legal form required.)

Firm's Name Purolator Products, Inc.

Date 6-2-55

Name of Employee John Doe Check No. ____ Dept. No. 000-00

Date and hour of accident 6-1-55 10 A.M.

Nature of Injury (Brief statement) Low back sprain

Place where accident occurred Press Room

How accident occurred While converting from coil stock to sheet steel, employee in loading the automatic feed had to lift coil of stock weighing 135 pounds. The distance from the floor to the reel was 21 inches. In lifting the coil to the reel, employee felt a pull in his back.

(In every case, indicate below (with an X) your opinion as to the direct cause of the accident)

PHYSICAL CAUSES

____ Poor Housekeeping (misplaced material, etc.)
____ Lack of Proper Guards (mechanical or electrical)
____ Improper Apparel (goggles, shoes, loose clothes, etc.)
____ Defective Equipment (hand tools, ladders, etc.)
____ Defective Floors, Stairways, Ramps, etc.
____ Poor Working Conditions (light, ventilation, etc.)
X Not Otherwise Classed (describe)
Not applicable

PERSONAL CAUSES

____ Dangerous Practices (undue haste, chance taking, etc.)
____ Inability (inexperience, poor judgment, etc.)
____ Incomplete Knowledge of Job at Hand
X Disobeying Rules
____ Unfit (weak, easily fatigued, easily excited)
____ Not Otherwise Classed (describe)

Measures I have taken to prevent a similar accident

This employee should have asked for help in loading the automatic feed. Since at times it is difficult to obtain help a work order has been initiated to provide for a monorail and suitable hoists for the loading of similar coil stocks in the press room.

Signature Foreman James Roe

These Forms Make Safety Go!

On this page and the opposite one are illustrated some of the most important reasons for the success of the company's safety program, according to Purolator executives. They are the key forms in the constant check the company keeps on accidents and health. Let's see what each one looks like: . . . . . .

At Left Top . . . The safety engineer's report on a typical accident. This form makes a competent safety judge (the safety engineer) responsible for deciding what were the causes, what to do about them, and following through on measures to prevent similar accidents. Note the engineer's cooperation with the victim's foreman.

At Left Bottom . . . Here is the supervisor's report on the same accident. It discusses the accident in more detail, places the responsibility, and at the end states specifically what is being done to correct the accident-causing condition.

At Bottom . . . The medical history of the patient again identifies the accident as well as the type of injury. It also follows through in covering the treatment of the injury. Note that all 3 of these reports supplement one another to give a total picture of the accident. They are integrated with:

At Right . . . this report, which goes to high management officials to keep them abreast of the success or failure of the safety program. From such reports as this a yearly tally sheet which tells at a glance what type of accidents have occurred, their severity and frequency, and where correction must take place.

R. H. Lamberding — Report of Injury

MESSRS.

M. D. Johnson, A. E. Bell, S. E. Cooper, S. G. Hegeman, J. V. Bluse, L. A. Richardson, J. H. Sherrier, J. P. Nesbitt

I. R. Tabershaw, M. D.

Doctor's Cases.....
Lost Time Cases.....
Frequency Rate.....
Severity Rate.....

Average Number of Employees -
Man Hours Worked During -
Working Days -
Man Hours Worked Since Last Lost Time Accident -

CAUSE OF INJURY BASED ON REPORTS RECEIVED

Falls.....
Falling Objects.....
Dangerous Practice.....
Handling Material.....
Lifting.....
Machine.....
Striking Objects.....
Tools.....
Vehicle.....
Other.....

Frequency Rate - Month Average - - - - -

REPORT OF INJURY

Date Employee Reported 6-1-55 Time 10:15 A.M.

Date of Injury 6-1-55 Time 10 A.M.

Name John Doe Dept. Press Room

Address 9 Roman Avenue Occupation Press Operator

Age 31 Wage Rate

Clock Number 000-00 How Long Employed

Foreman James Roe

Patient's Story of How Injury Occurred: I was loading the coil stock on the feeder and had to lift the coil stock pretty high to get it on the reel when I felt this pain in my back.

Nature of Injury: Low lumbar strain

Place Where Injury Occurred: Press Room

Witnesses None

Disposition Sent to Doctor 6-1-55 for diathermy treatment and back strap. To return to Doctor 6-6-55

Remarks None

Date Typed 6-3-55

R.N.
Signature of Person Taking History

Paperwork's Safety Record

(Continued from page 11)

the shop to make certain that safety features are incorporated before the machinery is placed in operation.

To coordinate the activities of all committees, the Safety Engineer is permanent Chairman of three committees and a member of the Executive Accident Loss Prevention Committee. His responsibility is to pass along from one committee to another all the communications, ideas and suggestions that arise out of each meeting.

Here's an example of how this information is communicated between committees: At the Employee Safety Committee meeting, a suggestion is made to provide mechanical hoisting facilities in the press room to avoid back strains and other injuries. Since this Committee cannot approve the expenditure, it is referred to the Supervisor Safety Committee meeting. It is the responsibility of this committee to analyze requests for equipment, to determine the necessity for such equipment, decide whether the equipment will eliminate existing hazards, and then determine the cost of installation. If the expense incurred exceeds the authority of the committee, it is referred to the next committee (Department Heads) with recommendations. The same procedure is followed here too. Generally, recommendations made by lower committees are approved and the necessary paper work authorized.

It has been the experience that 95% of the safety recommendations made by the Employees Safety Committee involve expenses of less than $100.00.

One of the chief reasons for the success of the Purolator safety program is the elaborate use which the company makes of accident and medical reports. The company uses no less than twelve reports to help it keep track of its accident and injury record. These range from regular physical examination reports to a special Classification for Responsibility of Accidents form which has turned out to be one of the most successful tools used by the committees.

This unique check list covers such points as the equipment itself and determines whether that equipment was poorly designed, broken, not properly guarded, or improperly used. Next point on the check list is that of supervision and this determines if the proper instructions were given for the use of the equipment.

Then the check list takes up the subject of the mental and physical fitness (or unfitness) of the injured employee to see if that was a factor in causing the accident. If the accident was caused by someone other than the party injured, he is also the subject of close scrutiny. The Committee then determines if carelessness on the part of the injured worker or other employee was a cause of the accident. It checks to see if the conditions causing the accident could have been avoided or controlled, if all safety rules were closely adhered to and if all protective devices were used. Finally, the Committee checks on the wearing apparel of the injured employee to see if it is improper or unsafe.

Purolator's Medical Department also came in for a complete reorganization under the new safety program and, in fact, is an integral part of that program. More intensified follow-up exams, extra forms, and more complete statistics provide a close check on accidents.

In addition to regularly scheduled physical examinations, employees are encouraged to see the company doctor about their own problems. Or employees may be referred to the doctor by the Safety Engineer for consultation if he feels it may prevent an accident.

The Safety Engineer is responsible for keeping a careful watch over all substances that are brought into the plant.

Mel Johnson, Vice President in Charge of Operations and chairman of the Executive Accident Loss Prevention Committee sums up the company's thinking on the subject of plant safety: "Our safety program is concerned primarily with the elimination of human suffering and secondarily with the prevention of valuable lost-time. From the very beginning of our program, we have emphasized the human factors and considered the economic aspects as secondary. By means of letters sent directly to employees' homes, posters prominently displayed in the plant, and rotation of members on the various safety committees we have tried to make every employee safety-conscious. We feel that all those factors make our program succeed."

Work Clothes Still Going Strong After 1 Year's Use

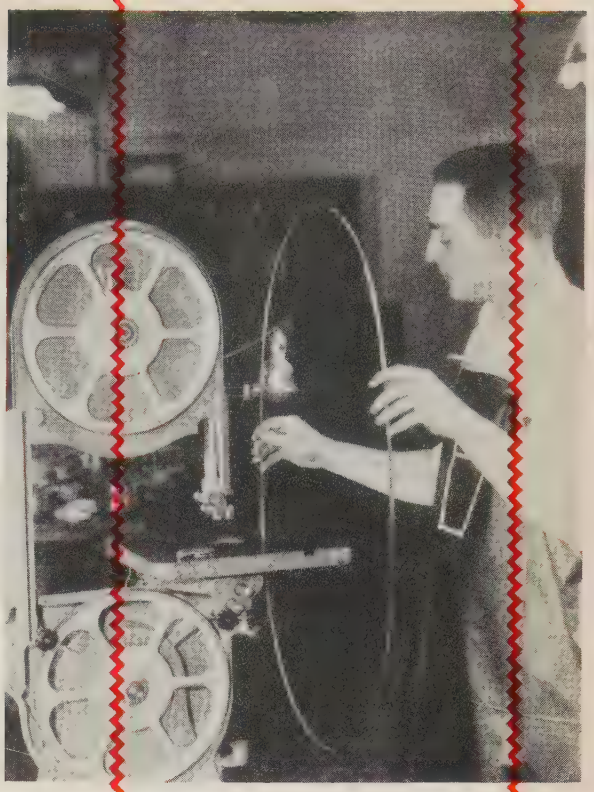
Workers at Stauffer Chemical Company's Brooklyn plant have found a way to put extra pennies in the family bank account without having to ask the boss for a raise. A new acid-resistant uniform of acrylic fiber adopted by the company has proved to be a worker's bonanza. Before the new clothes came on the scene, workers were buying an average of one new uniform every two months. "We bought 140 acrylic fiber uniforms in June, 1954," says G. C. Weber, plant manager, "and gave a pair to each man. If he needs a replacement, he simply turns in his worn clothes. After 15 months we haven't had a single man come to us for a new uniform!"

In addition to the fabric's chemical resistant properties, it is also moth-proof, mildew-proof, and launders easily. Uniforms remain neat and good-looking after repeated washings.

Picture by courtesy of Carbide and Carbon Chemicals Co.

BAND SAW BREAKAGE

...and how to stop it!



The man inserting the new band saw blade above can avoid breaking it, say power tool experts if he is careful in mounting and adjusting the blade.

ANY OF A NUMBER of conditions may cause a band saw blade to break, according to power tool experts. In some cases, blade breakage is unavoidable, being the natural result of the peculiar stresses to which such saws are subjected. But breakage is more often due to avoidable causes such as lack of care or judgment on the part of the operator in mounting or adjusting the blade or guides.

A band saw blade is a delicate piece of steel that is subjected to tremendous strain. Proper treatment is the best assurance of long service life. Selecting blades of the proper thickness and temper for the machine is a prime consideration.

Always use the widest possible, but use narrow blades for small, abrupt curves and for fine, delicate work. Wood-cutting blades should be filed and set when pressure is required to make them cut. "Hard-edge" blades for metal-cutting should be discarded when worn as it is not practical to resharpen them. Broken blades can be brazed or welded, but if the blade has become badly case-hardened, it will soon break in another place. Under average conditions, blades should be sharpened after about four hours of operation.

A reasonable amount of care and attention is the surest way to fault-free performance and accurate work. Over-straining the blade is a common cause of breakage and other poor performance. Tension of the blade should be varied with its width, and for different kinds of blades or work. Intelligent use of the tensioning gauge will eliminate many of the commoner blade troubles. Blade tension should always be relaxed when the machine is not in use.

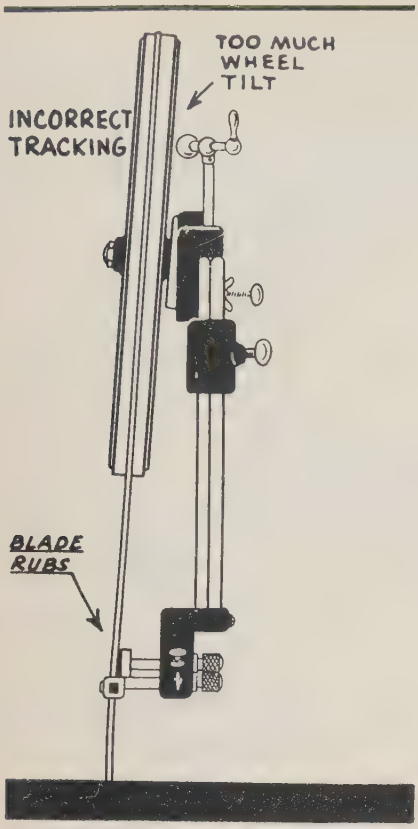
In centering the blade, wheels should be revolved slowly forward by hand to make sure the blade travels in the center of the tires. This operation should never be performed while the machine is running. After blade has been tracked in the center of the wheel rims, lock it firmly in place.

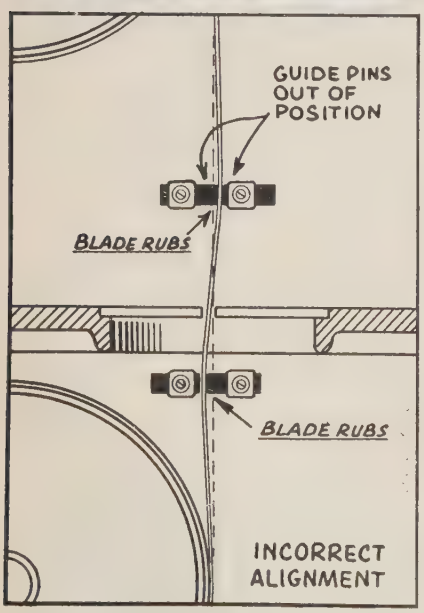
Brackets carrying guide blocks should be adjusted forward until front edges are just behind gullets of the teeth. If guide blocks are too far forward, teeth of the blade will be damaged. If they're too far back, the blade will not be correctly supported for curve-cutting.

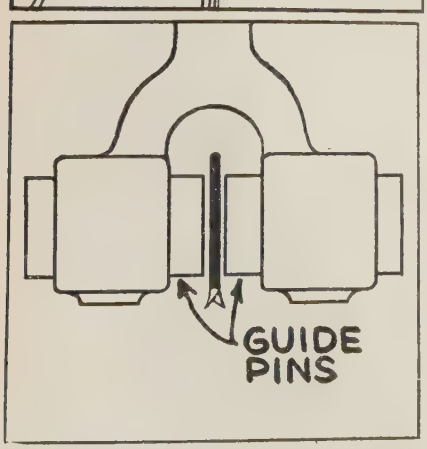
In lateral adjustment, guide blocks should be set inward until they are as close as possible to the blade without binding it. About 1/64-inch clearance should be left

Most common causes of blade breakage:

1. Use of blades without resharpening after they grow dull.
2. Faulty alignments and adjustments of the guides.
3. Forcing or twisting a wide blade around a curve of short radius.
4. Feeding too fast.
5. Insufficient tooth set.
6. Excessive blade tension.
7. Upper guide set too high above the work.
8. Using wrong blade for material being cut.
9. Using blade with lumpy or improperly finished braze or weld.
10. Worn or lumpy tires on wheels.
11. Insufficient tooth separation.
12. Unevenly worn guides which place undue tension on the blade.







The guide pins indicated above should be just back of teeth gullets of band saw.

between the back of the blade and the blade support when the blade is running free without cutting. If allowed to run hard against the support at all times, the back will become case-hardened, causing the saw to break eventually.

Guides should be readjusted every time the blade is changed, especially when blades of varying width are used. After considerable use, guide blocks will become worn at their front edges, causing a tendency to bind on the rear of the blade. Original accuracy may be obtained by reversing ends. When both ends are worn, grind them square or install new guide blocks.

Before starting the machine, recheck adjustments and place guards in position. Turn pulley by hand to make sure everything is in order before turning on the power.

In operation, keep the top guide down close to the work at all times. When using a band saw, do not force the material against the blade too hard. Light contact with the blade will permit easier following of the line and prevent undue friction, heating and case-hardening of the blade at its back edge.

With sharp teeth, very little forward pressure is required for average cutting. Move the stock against the blade steadily and no faster than necessary for easy cutting movement.

Avoid twisting the blade by sawing around sharp corners. Use a narrow blade to saw a very small radius. When cutting curves, turn the stock carefully so the blade will follow without being twisted. If a curve is so abrupt that it is necessary to back up and cut a new kerf repeatedly, either a narrow blade or one with more set is needed. The more set a blade has, the easier it will allow the stock to be turned, but the cut is usually rougher than where a medium amount of set is used.

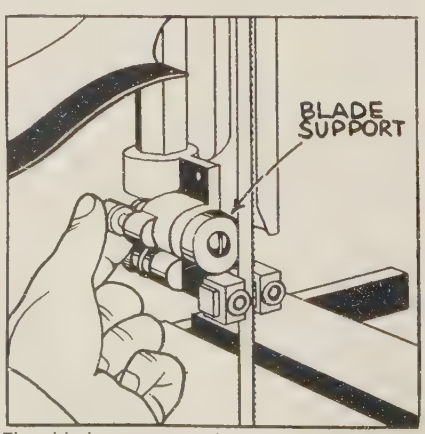
In withdrawing the piece being cut, take care not to draw the blade off the wheels.

Selection of band saw blades for metal-cutting should be guided by the material to be cut. Such factors as number of cutting teeth, their set and operating speed vary with the particular job to be done.

Metallic hose, for example, is best cut at only about one-tenth the speed that canvas and rubber hose are cut, and requires about twice as many teeth per inch.

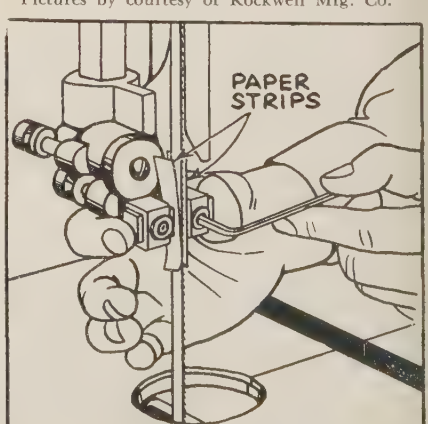
Slow speed is needed for metal sawing. An exception to this is the friction sawing technique which makes use of a high velocity blade speed, but for conventional sawing the blade speed should be in the neighborhood of 200 surface feet per minute for average work. Steel requires a slower speed than soft metals, and thick sections demand a slower speed than thin sections. When the blade speed is too high, the teeth are not given time to bite into the metal. The result is a skidding, rubbing action which fails to cut the metal and also leads to rapid dulling of the blade. As a rule of thumb, the softer the metal, the higher the cutting speed.

Blades for cutting thin metal should be selected so there will always be at least two teeth in contact with the edge of the work. If teeth are allowed to straddle the work, they will be torn off and the blade ruined.

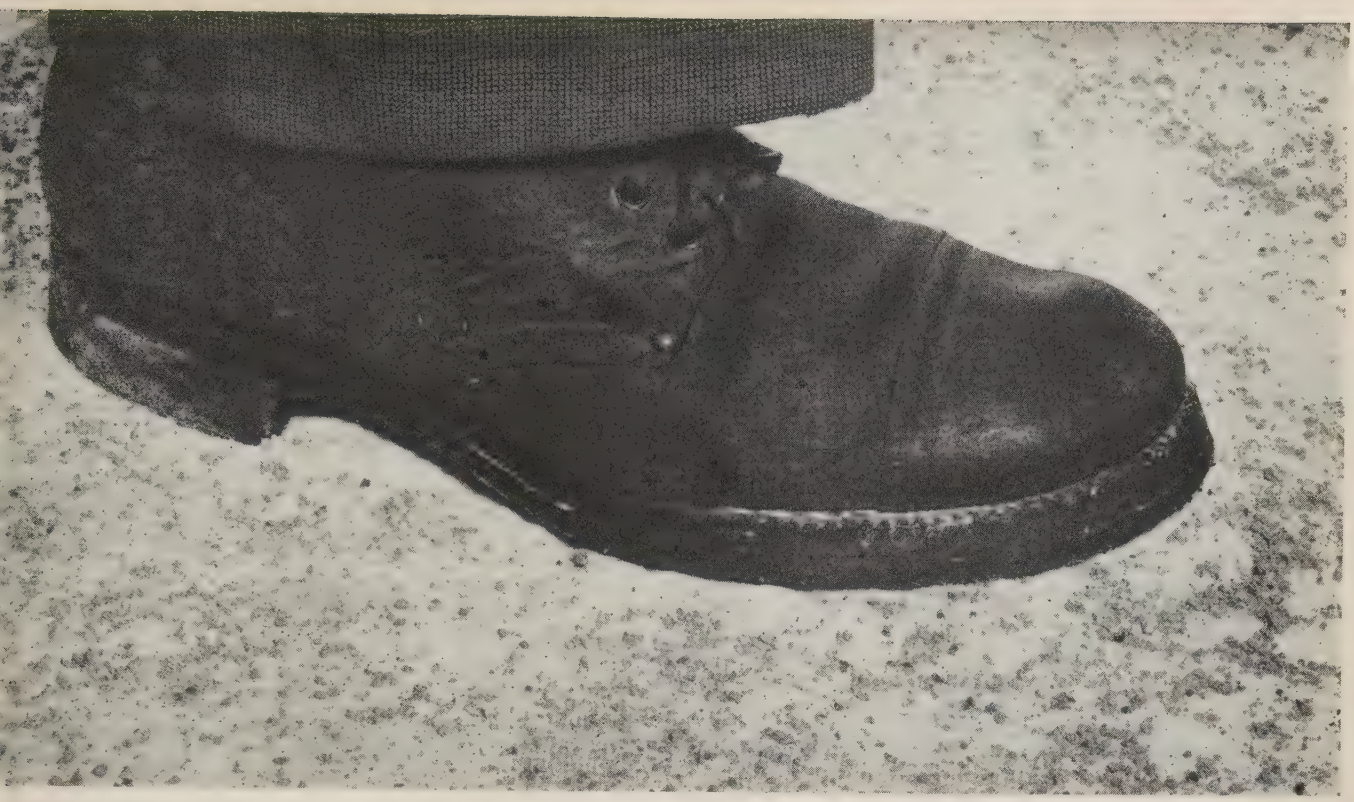


The blade support should be 1/64th of an inch from the back of blade run free.

Pictures by courtesy of Rockwell Mfg. Co.



A paper strip between each of the guides and the blade is a good adjusting trick.



For skidproofing, sprinkle ZORBALL *freely on icy, wet walks, drives, etc.— or spread on floors to absorb oil, grease, paint, chemicals.*

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Do Safety Incentive Award

Safety Tools and Training Aids Series more articles in Dec. and Jan.

Large safety certificates are posted where employees can see them, not in the lobby.

Many of the company's incentive prizes are designed to get the housewife interested.

Safety director discusses baseball trips as awards for safety with committee members.

YES, VERY DEFINITELY, says Tom J. Cain, Director of Safety for The B. F. Goodrich Company, Akron, Ohio. An accident prevention promotion job can be speeded up and made much more effective by the use of incentive awards.

The B. F. Goodrich programs are based on the thinking that accident prevention promotion can not succeed without a careful consideration of the role played by the individual workman. It is he, or she, who works safely or gets hurt. People, then, the "Joes" and the "Marys" are the most important part of the accident prevention approach. Guarding, inspections, engineering—all have their place in getting production with safety; but accident prevention efforts all too often fall down because we don't get our communications through to "Joe" and to "Mary"; we don't get our people into the act. Like a good many other phases of American industry, the movement for industrial safety turns from machines or things to people, from engineering to communications or selling.

Injury Frequency Reduced 92%

Goodrich has been using employee interest incentive awards programs effectively for eight years. During this period the injury frequency rate has been reduced 92% to new lows for the company, and less than half the injury rate for the rubber and chemical industries reported to the National Safety Council. The direct costs of injuries have shown a very favorable decline in spite of the inflation which has affected everything including the costs for having people hurt. As Cain reports, this is said not in the sense of boasting but to have you know that incentives for greater safety have paid off.

B. F. Goodrich started in 1947 with a safety-sports contest which provided all-expense trips to three major sports events: The Kentucky Derby, World Series baseball games, and Army-Navy football games for the lucky winners in the division showing the best injury frequency rate improvement by quarters of the year. The winning employees and their wives or friends made these trips. To add some fun to the contest rules, there was a stipulation that for safety the winner had to take his own wife. The foreman of the winning employee also received a similar trip for two persons. Result—the injury frequency rate was cut in half.

Covers More People

The following year it was decided that incentives should be spread to cover more people, and approximately the same amount of money, $6,000, or 50 cents per factory employee, was put up for the purchase of merchandise prizes worth about $10 at retail value, given to lucky winners on all shifts free from disabling injuries for a month. Results—a further reduction of 50 percent in injury frequency rates.

In 1949, as a result of employee suggestion, the incentive idea was spread still further by giving a candy bar each month to every factory employee free from disabling injuries on their shift. A percentage of the candy bars contained slips entitling the winners to a free pair of safety shoes by turning in the slip to his foreman. Persons who were on shifts having had a disabling injury received a package of chewing gum with a message, "Sorry, No Candy. Here's Something to Chew On—Work Safely and Win a Chance on a Pair of Safety Shoes Free Next Month." Results—again the injury frequency rate was reduced by almost 50%.

In 1950, merchandise prizes were distributed based on 50¢ per factory employee as against an average cost of $8.00 per employee per year for direct costs of injuries.

Pay Off?

Safety committee chairman counts some of the silver dollars used in a recent safety contest. The real pay-off was the increased safety contest produced.

In 1951, a Safety Shopping Certificate worth $10.00 was effective. The winning employee went shopping with his or her certificate won by practicing safety. Again, there were no drawing on departmental shifts having a disabling injury, thus encouraging the "lookout for my buddy" idea. To spark divisional interest, two sets, or eight Goodrich tubeless tires were drawn from every division meeting its "par," an established run of clear days based on past performance.

During 1952, U. S. Savings Bonds were the plant-wide awards—$500 in $25 bonds for 15 days clear; $1500 for 30 days, $2500 for 45 days clear. Four runs of 15 days, each equivalent to over a million man-hours clear of disabling injuries were recognized by saving bond drawings.

Appeal to the Sports

During 1953, an interest in spectator sports was combined in the safety promotion program by providing all-expense trips to Cleveland Indian baseball games. The number to go on each trip was determined by a schedule of days clear plant-wide. The winning individuals were determined by drawings and the immediate foremen of the winner went along. One of these trips required five busses and several bushels of peanuts. The letters announcing this plan bore the postmark "Accident, Maryland," and were mailed direcently to the homes of employees. Another town for safety mailing is Safety, Missouri.

The 1954 promotion included silver dollars for safety with a distribution of $500 each month in clear departments. The slogan—"It's Silver For Safety." This project was supplemented by awards of B. F. Goodrich tubeless tires. During one period, candy bars, with slips for silver dollars in a percentage of the bars, were wrapped with a brief safety message. The employee had to read the message to determine if he had a silver dollar coming his way from his foreman.

During 1955, the Safety Mystery Man idea has been used. This plan consists of passing out safety silver dollars to production employees observed working safely or wearing their safety shoes, or knowing the right answer to a series of questions related to accident prevention in their department.

Must Have Fresh Approach

Safety Director Cain emphasizes that such programs must have change—a fresh approach with new advertising is all-important in the use of incentive promotions. No program has been permitted to run longer than one year, and most phases are limited to a quarter, or three months. Remember the rule that while the safety program is getting results is the best time to intensify the activities, not when the record begins to slump.

Does all this pay? Approximately $6,000 to $11,000 every year has been used for these incentive programs at B. F. Goodrich, Akron. The answer is that the rubber industry, and more particularly, The B. F. Goodrich Company, doesn't spend money for nothing. Our safety men are quick to point out that when a disabling injury occurs it goes into the record and there is none of the making a paper record to kid the employees or others concerning results.

Are such programs necessary? Many times you have heard it said: "I never thought accident prevention would come to the place where people are rewarded for doing something they should do for themselves and for their own good." It is easy enough to say, accident prevention is the responsibility of our foremen and we don't need a lot of gimmicks to get the job done.

Gimmicks Help the Job

Aren't we kidding ourselves with such a policy? The foreman is a busy man and needs assistance in the form of stimulation, information, and promotion sales help if he is to sell one of the most difficult of commodities—an intangible—safety. Practically all companies use some type of incentive awards in connection with merchandising. However, their safety men lack the courage or salesmanship, or something to sell the same encouragement for promoting accident prevention. *(Continued on the next page)*

In spite of the successful use of safety incentive awards at B. F. Goodrich, Safety Director Cain is quick to point out that there are many pitfalls in the use of such promotions. As he says, "There is no easy road to accident prevention and you well know it. You're selling an intangible and it takes a super salesman approach. Incentives are the advertising and the sales props. All of the basic ideas in a safety program must be carried out before you start asking employees to buy a product even though of the utmost importance from their point of view, their own personal safety."

Cain says that he is always fearful in discussing the question of incentives that someone may grasp at such a plan as a shortcut, or an easy method. These **cautions** are important:

1. Incentives aren't the entire answer, all of the basic accident prevention know-how must be used.
2. Minor injuries should not be penalized in such programs.
3. All programs should be designed so as to insure that foremen must make daily personal safety contacts.

While incentive programs and accident prevention promotion offer spark and enthusiasm, they are at best advertising tools only and will surely never replace basic accident prevention training right on the job.

Pictures by courtesy of B. F. Goodrich Company.

New Wire & Cable Developments Revealed

The latest developments in the wire and cable industry were discussed at the fall meeting of the National Electrical Manufacturers Association's Wire and Cable Section before eighty five of the industry's executives at Skytop, Pennsylvania.

A performance standard for magnet wire was discussed by R. L. Reading of the Belden Manufacturing Company. He said, "in view of the numerous materials now available that are considered suitable for magnet wire film coatings, and recognizing the impracticability of issuing standards for each of these new film coatings, a NEMA Wire and Cable sub-committee has been formed to investigate the possibility of writing performance standards for the various thermal classifications (Class A, Class B, Class C).

"As an initial step, a performance standard is being written for film coated wire satisfactory for operation at Class B temperatures."

Dr. George Perkins of the Reynolds Metals Company in discussing the growth of aluminum usage said, "in the magnet wire industry aluminum has proven to be technically sound. Manufacturing problems have been met and solved, often in a manner that resulted in improved operations.

"Forming, joining and assembly have been demonstrated as thoroughly feasible. Operational characteristics of aluminum wound devices have been proven in service."

The chief changes in the new Bureau of Mines Schedule 2-F entitled, "Electric Motor-Driven Mining Equipment Junction Boxes," were reported by E. G. Sturdevant, chief engineer, United States Rubber Company. He said the changes that interested the wire and cable industry are "that it permits the use of a ground trip relay as an alternate to a grounding conductor in a cable for keeping the frames of underground equipment at ground potential, and that it provides for a procedure to govern the use of unapproved or experimental equipment in gassy mines for a six-month period. This trial period may be extended to one year by approval of the Bureau of Mines," he said.

Fred Paradise of Underwriters' Laboratories, Inc., Chicago, reported on U. L. Tests "which simulated the abuse conditions that flexible cords would suffer in actual usage. The data that will be obtained will be used as a basis for selecting appropriate cords for various types of electric appliances," he said. "This work may ultimately affect U. L. standards and cord designs."

In discussing the trend towards super high-tension cables, Robert J. Wiseman, of the Okonite Company, said, "The electric cable industry is now studying methods for improving the materials used for insulation. It is reviewing the manufacturing methods employed, and is investigating the thermal and physical properties of the soil surrounding the cables to find how to get the highest possible current-carrying capacity out of the power circuit. These studies will take a few years. After they are completed, the electric utilities plan to conduct tests that duplicate operating conditions so that it will be possible to meet the doubled capacity that forecasts show for 1965."

"Rubber insulated cables, especially in the 2 to 35 kv range, are being used more and more as the electrical industry expands. It is anticipated that the output for Class I systems in the United States will approximate 900 billion kw-hrs in 1963," stated G. J. Crowdes of Simplex Wire & Cable Co. "Such a load will need efficient design of the electrical, mechanical and thermal characteristics of rubber insulated power cable."

He said that many comparative tests and field experience show that butyl and oil base rubber differ in their properties. Butyl insulation has greater resistance to heat and aging, deterioration from moisture, ozone and corona. "The dielectric strength of the two materials seems to be reasonably close. The dielectric constant and power factor are lower for the butyl insulation and the resistivity is higher," he said. "Finally, these properties permit the butyl insulated cable to operate at higher temperatures for normal, emergency and short-circuit loads."

Proposed changes in the 1956 National Electrical Code as they affect wire and cable were discussed by C. W. Zimmerer, associate electrical engineer, Underwriters' Laboratories, Inc., New York, N. Y. He said that the proposed changes will include a complete re-arrangement of the sections relating to wire and cable, for the purpose of making this information more usable.

In addition, the following new items are among the more important proposals recommended by the Code-Making Panel No. 6: 1. A section on temporary wiring; 2. A heat-resistant, rubber-insulated wire (Type RH-90) for use at 90C; 3. Establishment of maximum temperatures for copper and aluminum conductors; 4. Tables for the current-carrying capacity of insulated aluminum conductors.

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Safety Maintenance SALUTES

A SAFETY IDEA

Crane is protected while lifting heavy steel loads in picture above by gauge near handling hook which operator can read at a glance to see if load is too heavy for crane to lift safely.

As operators of heavy materials handling equipment know many expensive cranes have been damaged by dumping while lifting excessive loads. This has happened in spite of weight-radius charts posted in the cabs.

This danger has been virtually eliminated in the yards of The Timken Roller Bearing Company at Canton, Ohio. In the accompanying illustration, the testing device, used as a scale, is positioned directly in series with the load and between the lift hooks. It instantly indicates to the operator if the load is beyond the weight-radius capacity of the crane.

Although the particular meter used at Timken Bearing is of an 0–50,000 lb. capacity, these instruments are also available in 12 other ranges, from 0–500 up to 0–100,000 pounds, each individually calibrated for accuracy. All will withstand accidental overloads of up to 25 per cent without injury to calibration, and actual safety factor is several times the rated capacity, according to the manufacturer.

Photo by courtesy of W. C. Dillon & Company, Inc.

Injury Rates Climb Up in Second Quarter

The injury-frequency rate for manufacturing rose 5 percent, from 11.1 disabling injuries per million man-hours worked in the first quarter of 1955 to 11.6 in the second, according to preliminary reports received by the U. S. Department of Labor's Bureau of Labor Statistics.

This was the second quarter in succession in which the injury rate has increased; however, the average of 11.4 for the first 2 quarters of 1955 was equal to the record January-to-June low established in 1954. The increase from the all-time record low (10.0) of December 1954 has been gradual.

"Although this increase is not alarming, and the level of injury rates is still low, these figures clearly indicate that we cannot slacken our safety efforts if we wish to maintain or improve the splendid safety record which industry has achieved," Secretary of Labor James P. Mitchell warned in commenting on the figures. "Increased employment, the hiring of new workers, and generally stepped-up activities in industry undoubtedly contributed to the rise in injury rates. However, this very fact calls for intensified safety training among new workers and attention to safety factors in new processes. There must be no let-up in our efforts to save the life and limb of our workers. Despite the overall increase, many industries have achieved enviable safety records and are keeping their injury rates at low levels, a challenge to other industries."

Of the 127 individual industries for which quarterly rates were computed in the survey, 50 showed increases of 1 full frequency-rate point or more between the first and second quarters of 1955, 58 showed little change, and 19 recorded significant decreases. Six of the 9 industries in the primary metals group showed increases of 1 full point or more; 4 of the 6 in the lumber, 9 of the 15 in the machinery, 8 of the 16 in the fabricated metals, and 3 of the 6 in the furniture group showed significant increases.

For copy of booklet described opposite use Key # L-9 on card on page 73.

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increases productive efficiency in famous aircraft plant

Properly engineered color plan throughout plants of The Martin Company provides better working conditions that increase quality and quantity of output and improve spirit and enthusiasm of workers.

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These huge factories, with five million square feet of floor space, produce many types of military aircraft as well as tactical missiles, rockets and numerous other items for the armed services.

The new color plan for these plants was carefully chosen according to the principles of COLOR DYNAMICS.

Colors were selected for interior walls and ceilings to raise the light level in all working areas. Stationary as well as moving parts of machines were given colors that permit the operator to focus his attention on his task with less eye strain. Safety colors on motorized equipment and traffic lanes have reduced danger of time-loss accidents.

The Martin Company's satisfaction with COLOR DYNAMICS is best summarized by G. T. Willey, Vice-President in charge of manufacturing:

"We believe we have successfully attained our objectives with COLOR DYNAMICS. Both quality and quantity of our output have increased. The improved surroundings have raised morale among our working force. The pride our employees take in their environment is reflected in their eagerness to keep work areas clean, thus simplifying housekeeping.

"The colorless and uninspiring whites and grays we had collected dirt easily. We believe our present colors will cost us less to maintain. Thus the additional benefits we derive from COLOR DYNAMICS are a highly gratifying plus value."

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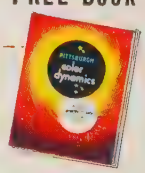
d for our free book which explains simply arly what COLOR DYNAMICS is and how its principles. It contains scores of practical Better still, call your nearest Pittsburgh Plate Glass Company branch and ask to have a representative make a comprehensive engineered color study of your plant—without cost or obligation. Or mail this coupon.

Send for a Copy of This FREE Book



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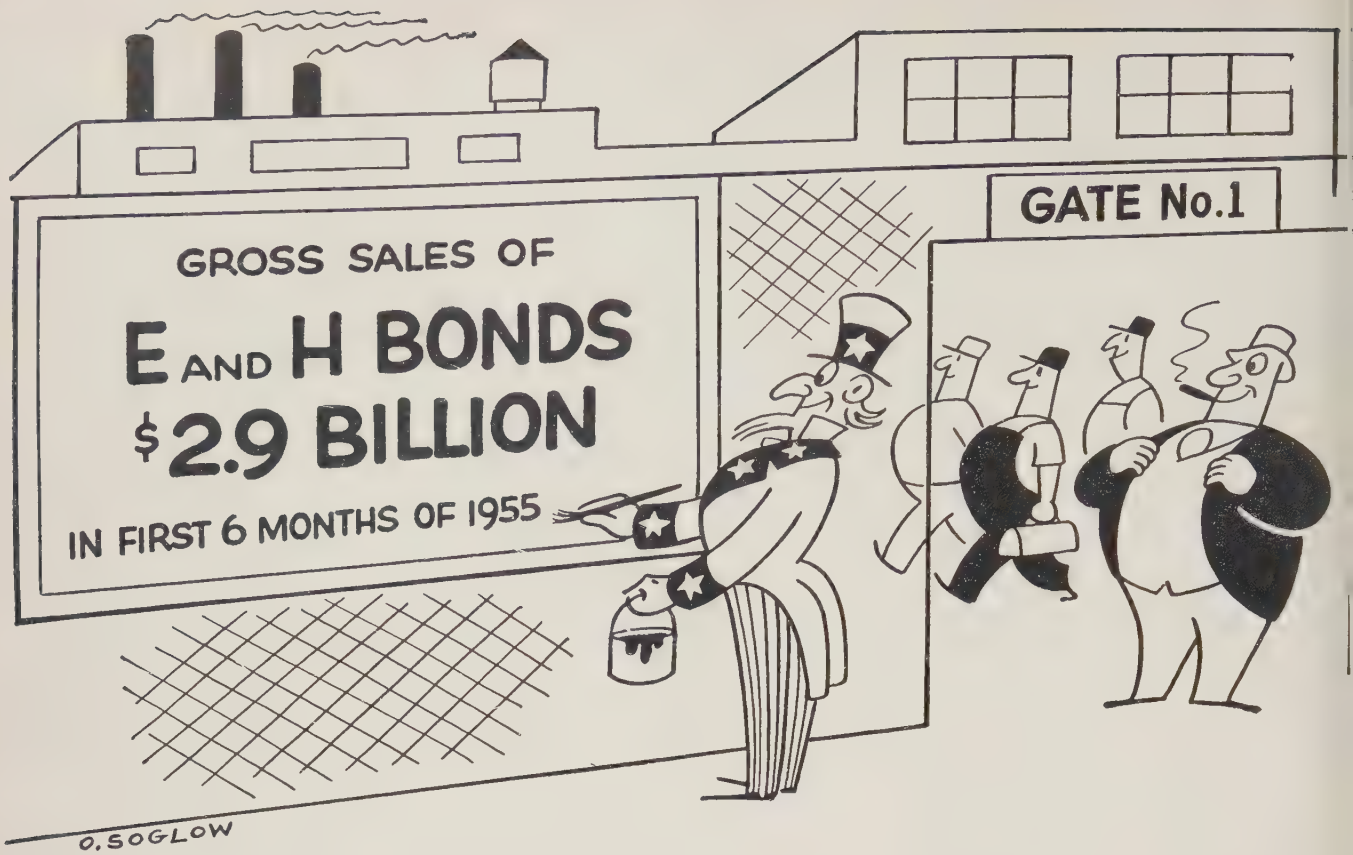

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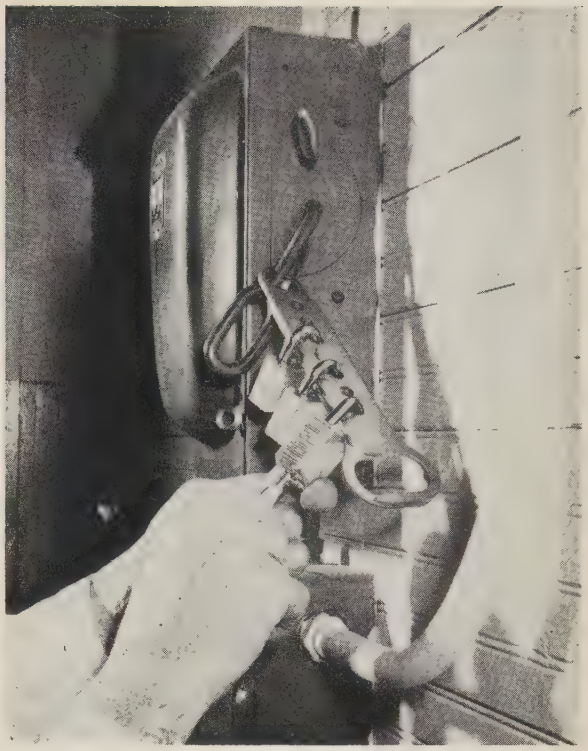
Safety Maintenance

LOCK OUT

the switchbox hazard



Six men can lock out the switchbox at right with the device shown. Although one lock is being removed it is impossible to turn on any power until all locks are opened one at a time by each of the maintenance men working on the line.

A 10-POINT PLAN to eliminate one of the major hazards confronting industrial maintenance men has been proposed by Samuel Stahl, president of the Master Lock Company, Milwaukee, Wis.

The danger stems from the fact that switchboxes control power to electrically driven machines. Thus, the possibility exists of a control switch, physically remote from a machine, being turned on while a maintenance man is repairing that machine. This is a frequent cause of industrial maintenance injuries and deaths.

Avoiding this type of electric switch hazard is a puzzling problem. Companies trying such methods as posting warning signs and removing fuses have failed to prevent accidents. Somehow, someone throws on the switch while repairmen are still at work. Padlocking switchboxes "is the only positive protection measure," according to the National Safety Council.

Master Lock, which has supplied padlocks to thousands of plants, recommends these steps in establishing foolproof electric switchbox safety systems.

1. Make each worker responsible for his own safety by providing him with his own padlock, either combination or key-type.
2. Issue only one key for each lock. The supervisor, however, should keep a master list of key numbers, and the extra key to each lock in his department. But the extra keys should never be loaned out for any reason. Keep extra copies of combinations, where combination padlocks are used, in the hands of a single supervisor.
3. If a supervisor uses the extra key during emergencies, the old lock and extra key should be destroyed and replaced. This precaution eliminates the possibility of the original key turning up and removing the safety padlock at the wrong time.
4. Check to see that no two locks and keys are the same. Best insurance against duplicate locks and keys is to purchase padlocks made by a reputable manufacturer.
5. The company should purchase all padlocks for its employees, rather than let them supply their own. This insures high quality padlocks such as the laminated, pin-tumbler type, that cannot be opened or broken.
6. Establish a careful clearance policy when two or more workers, or departments are involved. Faulty clearance systems often cause casualties even though every man has his own padlock.
7. Require each man to attach his own padlock to a switch control, even though it is already locked. (Steel tongs should be attached to switchboxes to accommodate more than one lock. This can consist of two pieces of ⅛-inch metal with the necessary number of padlock shackle holes.)
8. Impress each employee that even though someone else has already locked the controls, he will not be protected unless he attaches his own padlock.
9. Prevent men going off a job at the end of a shift from removing their locks until those on the next shift have attached their locks.
10. Identifying individual padlocks is suggested in large plants where the controls may be some distance from the operation under repair.

Picture by courtesy of Master Lock Co.

by **E. S. MOORHEAD**
District Manager
Hoisting Equipment
The Yale & Towne Manufacturing Co.

their proper inspection,

ANY DOCTOR WILL TELL you that the human body is a deceptive piece of equipment to work with. Some men appear calm, cool and collected, but upon intensive examination the doctor finds they not only have ulcers, but their ulcers have ulcers. To discover this, the doctor finds clues in a man's behavior, his blood pressure, etc. However, a real internal examination is necessary to be sure of exactly what the patient's trouble is. To a layman, there may be nothing at all wrong with him; he looks fine.

The chain fall is somewhat in this category, but I would say it is more "honest" than the human body. The majority of its ailments can be spotted by anybody. For instance:

IF the brake is worn, it starts to slip gradually.

IF the hoist is a "wetbrake type" and lowers hard, it indicates a need for lubrication.

IF the hook is open, it has been overloaded or the hook is improperly loaded.

IF the chain is stretched, it doesn't seat properly in the load sheave.

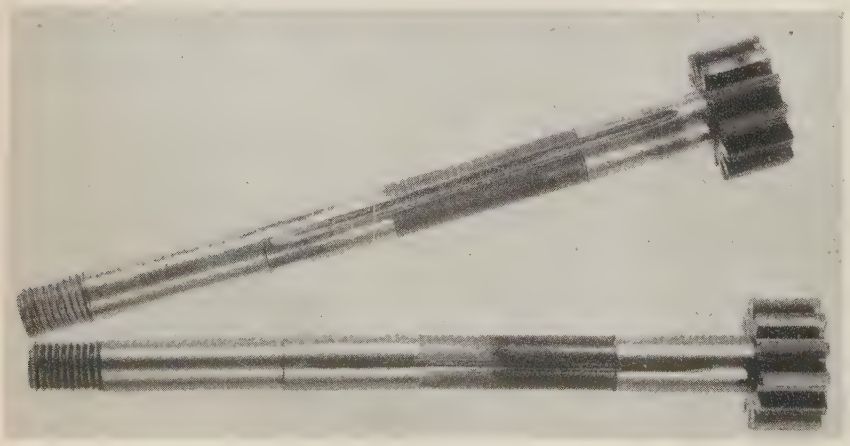
All of these things give you a nice **visual** warning; but, like a man with ulcers, there is a possibility that the internal parts have been damaged or badly worn. Like a doctor, you will never know until the hoist fails unless you **look inside.**

The obvious answer is routine internal inspection. This is only part of the answer however. Again, like a doctor, we have to find a way to prevent this trouble in the future, to give our patient a long and useful life.

Inspection

On-the-job inspection of a hoist is a necessity. Many unsafe conditions can develop on the job. We're whistling in the dark if we depend on the hoist to stay in safe condition after it leaves the storage area.

To assist in this spot checking, our company has developed a check gauge. The purpose of this tool is to compare chain stretch, chain wear, and hook opening, to the maximum safe limits for a particular hoist. The gauge has two points, set apart at the maximum safe length for a given number of links. A small slot in the end of the tool is the minimum safe link size, and is used for measuring the wear at the bearing points of the chain. The overall width of the end of the gauge is the maximum safe hook opening.



Twisted instead of straight oil groove on top pinion is one indication of hoist failure.

These dimensions are based on these "rules of thumb":

1. Chain 3 percent or more longer than its standard length is unsafe.
2. Links worn to 20 percent below standard thickness are unsafe.
3. Hooks opened 35 percent more than standard opening are unsafe.

While we set the figures above as rules, our common sense tells us that whenever we spot stretched chain, worn links, or opened hooks, the safest thing to do is replace them. Why gamble with lives and equipment?

This tool, as designed, is good for only two sizes of hoists of a particular make. Each hoist manufacturer may use a different pitch chain or different type hook, so one needs a set of gauges for each make hoist.

It is advisable to have, not only a safety inspector covering the hoists throughout the yard, but to have someone in each working crew, usually the leader, keeping an eye on the hoists for defects.

On-the-job inspection should check:

1. Check chain for wear, stretch or damage to links.
2. Check hooks for opening.
3. See that both top and bottom hooks are carrying the load at the hook center and not on the hook tip.
4. Check handwheel action. The handwheel has a back movement (or play) of 1 to 1 and a half pockets before the handwheel strikes the check washer lug. If it has to turn 3 pockets or more, some of the brake parts are worn and need replacing.
5. Check action of hoist. If it lowers hard it usually means lack of lubrication in brake. If you have excessive pull in both directions it can mean lubrication, or it may be a bent driving pinion.

CHAIN HOISTS

maintenance and use . . .

All hoists being returned to the rigging loft at the completion of the job, and hoists being sent back as defective by on-the-job inspection should receive:

1. Chain inspection as above.
2. Hook inspection as above. Replace, don't reshape hooks.
3. Take handwheel off and examine brake parts including pawl, galvanized iron disc, ratchet disc, leather disc, and replace worn parts. Also check the pawl action to see that it properly engages the ratchet disc. It may be that a new pawl spring is indicated.
4. Take gear cover off and examine gears for wear.
5. Knock out driving pinion and examine for twist or damage. Twisting can be easily spotted in our hoists and I assume others too, by the straight oil groove along the length of the driving pinion. If this is twisted replace the pinion.
6. If chain has been stretched, look for worn load sheave pockets. If the pocket shoulders are worn down, replace sheave.
7. Also, stretched chain indicates worn load chain guide and stripper.
   You should have ⅛ inch clearance between load chain guide side and the outside diameter of the load sheave.

Now that you've been inside the hoist, replaced worn parts and reassembled the hoist, we are ready for the 50 percent overload test.

Testing a hoist without internal examination is like an ostrich sticking his head in the sand. This is no protection at all.

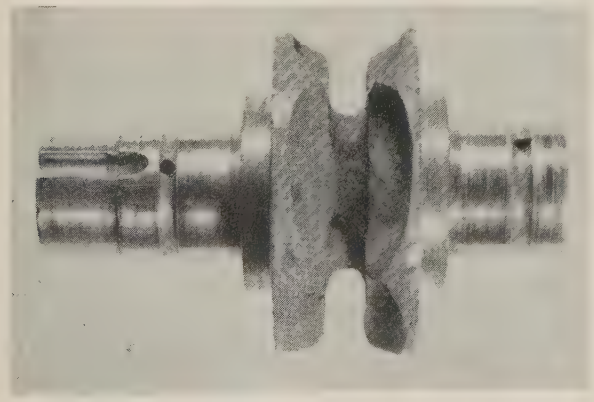
Picture a pawl that is worn, and a pawl spring that is weak. It happens to engage the ratchet disc during your test, but when it gets on the job it misses. This and other borderline defects can pass the external test you make; examination of the inside working parts should be made first.

Our company, and, I believe, most other manufacturers, load test hoists to 50 percent overload on a long ton basis. We use weights and test the hoist not only for carrying the load statically, but for the brake action as well, by manually operating the hoist in the down direction.

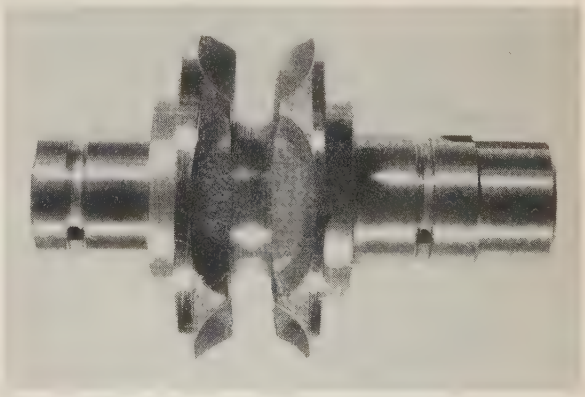
There are other, more convenient ways of test loading hoists. I understand some places use an hydraulic loading device. Others have a type of strain gauge. Regardless of the type, I strongly recommend that hoists be test-operated under 50 percent overload.

Maintenance

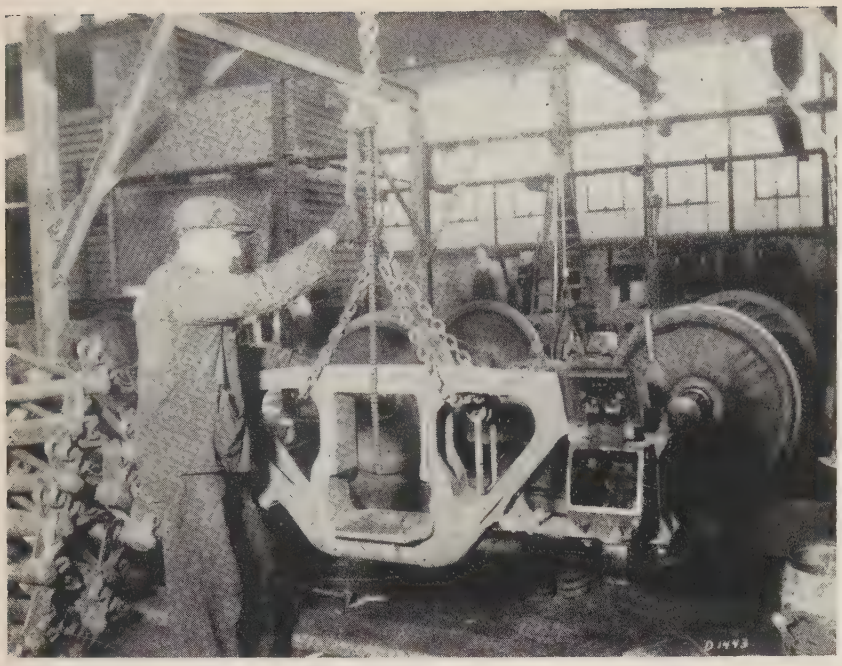
The usual recommendation for the frequency of complete inspection of the chain hoist in normal shops is: hoists in severe or continuous service, once a week; hoists



The worn sheave above shows pockets which can cause the chain to slip at critical moment when hoist is used.



The perfect new sheave above is a definite contrast in safety to the extremely worn and dangerous sheave opposite.



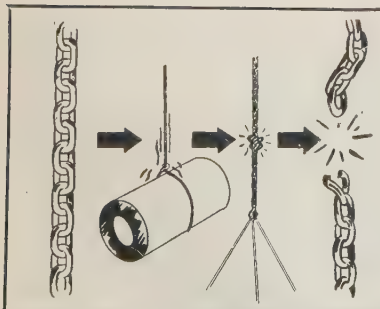
in frequent daily service, but not continuous, once a month; hoists in average or partial daily service, every 3 months.

However, in shipyards, due to the nature of the work, overloading is so apt to occur, and damage from dropping or rough treatment almost bound to occur, that I recommend a hoist receive a complete checkup repair and test each time it is returned to the hoist storage area.

Good maintenance pays dividends in longer hoist life as well as giving protection to the user. How long would a car motor run without oil? The first stroke of the piston would start the wear on the cylinder wall. The motor would last a few miles and then—the junk heap. A hoist chain has moving parts, steel against steel. Without lubrication the wearing time is one-20th the life of a lubricated chain.

If you allow stretched chain to stay in use, you create excessive wear on more expensive items, such as the load sheave. The load chain guide and stripper will also wear out fast. You don't save by keeping worn or stretched chain on the hoist.

Another unsafe practice is the reshaping of stretched hooks. If you will examine a stretched hook you will usually find cracks or faults on the inner hook surface that has been under tension, the outer surface has been compressed.



KNOTS MUST NOT BE TIED IN CHAINS. IF THE LINKS OF THE CHAIN DO NOT WORK FREELY WITHIN ONE ANOTHER, THE CHAIN HAS BEEN OVERLOADED AND STRETCHED. SUCH CHAINS MUST BE REMOVED FROM SERVICE IMMEDIATELY.

Now, when you reshape the hook, you reverse this condition, i.e., inside under compression and outside under tension. This mechanical damage, these cracks, do not disappear; the reheating does not eliminate these weakening defects —they are still there. Furthermore, the reheating itself is apt to take away the effect of the original heat treatment, giving you a soft weak hook. It's just not worth it. Why gamble with lives and equipment to save the price of a hook?

I have been asked about annealing. Some users periodically anneal hooks, chain, shackles, etc. Speaking only on the subject of hand hoist hooks, **don't do it.** Annealing started way back when wrought iron was used both for chain and hooks. Its purpose was to relieve the work hardening on the wearing surfaces. In the case of wrought iron the annealing did not weaken the material.

For today's steel hooks and chain, majority of which are heat treated for strength, annealing is wrong. The effect of work hardening on steel has never been found seriously detrimental. Annealing serves no purpose but to take out the effect of heat treating.

Safe Use

There is more to this hoist problem than mechanical maintenance however. It is the human problem. The shop may do a fine repair job, but what about the cause of the damage in the first place?

When hoists are thrown 30 feet over the ship side to the dock, when the hoist is overloaded 6 times its rated load, when the hoist is left in 3 inches of water overnight, something besides maintenance is needed.

When a man is not held responsible for equipment, he tends to be careless in his treatment of it. As painful as it may seem to some, the keeping of records will go a long way toward controlling this attitude. When the user knows hoist number 62 is assigned to his

crew and that it must be checked in when he's through with it, he knows that the condition of the equipment is his responsibility.

This record keeping can be simplified by using a repair parts check sheet form with space on it for comments, dates out and in, number of hoist, name of user. The hoists should each have a permanent number marked on them.

These records will help analyze any hoist problem. They will show the job, the crew and what damage was done to each particular hoist. Another benefit will be an indication of which hoists hold up the best.

Beyond the keeping of records, if possible, a meeting of leaders to educate them on hoist inspection might be a good idea. This could be worked through the safety department with the safety engineer instructing, or worked jointly by both safety and hoist repair departments. But the very act of giving hoists special consideration by a meeting of this kind will gain the hoist more respect from the men that use it.

The control of overloading and other misuse, again will depend on the "on-the-job" inspection by the safety department and crew leaders. It will be up to these men to spot misuse and correct it.

Have them watch the angle of the load chain with the horizontal. The greater the angle, the smaller the chain capacity. For instance with the chain at 60° with the horizontal, you have 86 and a half percent of chain strength, at 45° you have 70 percent, at 30° you have 50 percent, at 15° you have 25.8 percent, at 10° –17.3 percent, 5° --8.7 percent. So if you use a 3 ton hoist, you don't have 6 tons with this arrangement as some think, you have a fraction of 6 tons depending on the angle of the chain. At a 30° angle you would have only 3 tons instead of 6 tons.

To reduce this hazard, first set your supporting shackles as close together as possible to increase the angle of your load chain with the horizontal giving you maximum chain capacity. Second, select your hoist capacity, not only by the weight to be lifted, but also take into consideration the angle of pull with which you have to work.

There is another lesson here which should be applied on all jobs. First, the load chain of the hoist should not be used as a sling chain to cradle the load where this can be avoided. The reason is twofold. You are apt to strain links by bending or twisting with this side thrust; the links also may become scarred or mutilated in such a way as to reduce their cross section. The saying is still true, "The chain is as strong as its weakest link."

This mutilation of the link is particularly true where the object cradled is square or flat in cross section, i.e., has sharp corners.

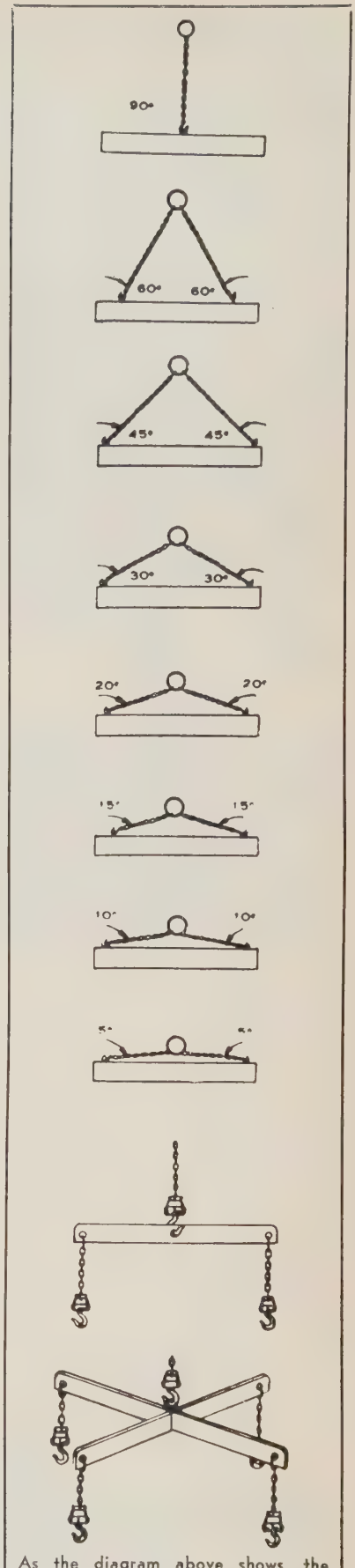
To reduce chain damage it has been suggested by one user that heavy canvas pads be placed between the chains and the load to protect both the chain and the piece being lifted. This pad also helps to spread the load on the chain and to prevent abrasive wear on the chain. It has also been suggested that the chain be heavily greased.

Let me briefly summarize what I have suggested:

1. Inspection of hoist on the job by crew leaders and safety inspectors.
2. Complete inside and outside inspection each time hoist is brought in from job.
3. Test to 50 percent overload **after** complete inspection.
4. Assign numbers and keep records of hoists including description of repair and record of user.
5. Take the angle of pull into consideration in selecting size of hoist for job.
6. Protect load chain from damage when used as cradle or sling by use of pads.
7. Don't use the hoist chain as a sling or cradle unless there is no other way.
8. We do not recommend reshaping of hooks.
9. Give importance to "the proper care and use of the chain hoist" by holding meetings with your leaders and safety department.

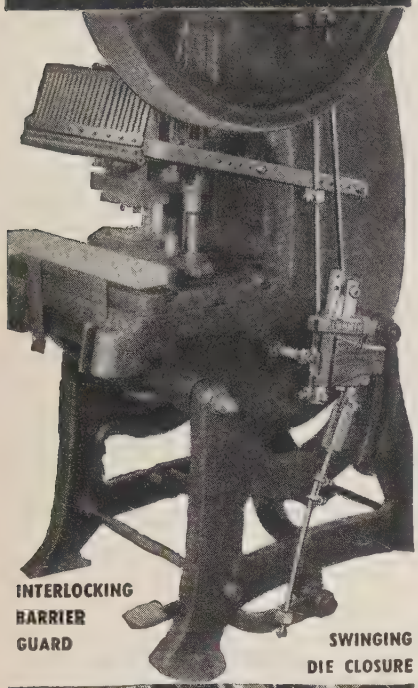
Pictures by courtesy of Yale & Towne Mfg. Co.

From an address at the 1955 Greater New York Safety Convention.



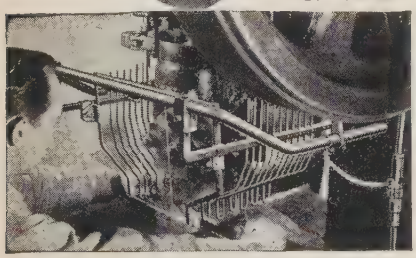
As the diagram above shows, the greater the angle at which the chain meets the load, the less of the full strength of the chain is available to hold the weight. Danger of chains breaking over sharp edges of the load is also increased by sharper angle.

JUNKIN
SAFETY GUARDS



INTERLOCKING BARRIER GUARD

SWINGING DIE CLOSURE



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JUNKIN safety guards prevent press accidents, afford maximum protection, increase press production, lower insurance costs and generally improve plant morale Make an investment in safety now and investigate Junkin Safety Guards for primary and secondary punch press operations. Write for free catalog "The Key to Protection".

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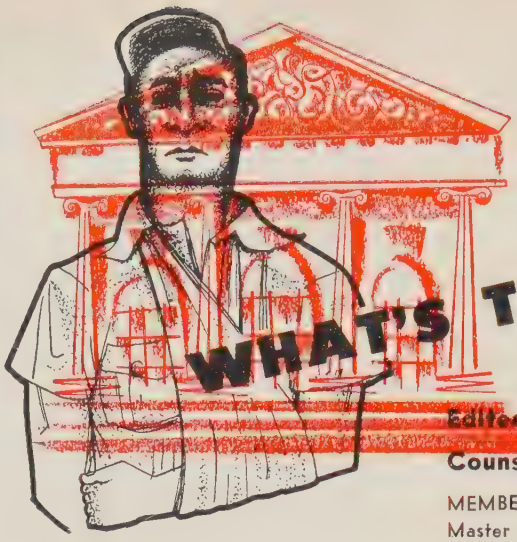


WHAT'S THE LAW?

Edited by HENRY M. GROSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey American Bar Ass'n, New Jersey Bar Ass'n, Chairman, Committee on Workmen's Compensation, New Jersey Bar Ass'n National Federation Insurance Counsel Past Commander, American Legion, Post 10, ... Newark, N. J.

WILFUL MISCONDUCT—Burden of Proof

The wife of a deceased coal miner was awarded benefits for the death of her husband, even though the employer contended that death benefits were unwarranted because of the wilful misconduct of the dead man. The miner had been told by his foreman to quit working a certain room in the mine because of the dangerous condition of overhanging rock there. The employer contended that the disobedience of this order caused the employee to lose his life when the rock fell and crushed him. The court ruled that before compensation can be denied under the compensation law, it must appear that such misconduct, if any, was wilful. In this case, the court ruled there was no wilful misconduct and death was compensable.

HOODENPYLE V. PATTERSON, Tennessee Supreme Court, March 11, 1955.

It appears, therefore, that the employer should not have allowed the miner to continue working in the dangerous room. The fact that the dead man was told not to work there was not sufficient reason to relieve the employer from responsibility in this case. The employer should not have allowed the employee to work in that room under any circumstances.

OVEREXERTION—Enough Evidence

A claimant, employed to keep a railroad yard clean, was injured when he lifted an "extra big" bundle of refuse he had gathered in the yard. He was awarded compensation for his injuries. He was 71 years old and the bundle he lifted weighed between 90 and 100 pounds. The evidence showed that he felt a "terrific" pain in his head, neck, back and legs as he lifted the bundle to his back and that he felt shaky and weak. The court held that the evidence was sufficient to support the findings. He was awarded compensation for injuries resulting from extra heavy effort, strain and exertion, while engaged in the regular course of his employment.

LIPIARZ V. INTERNATIONAL MILLING COMPANY, New York Supreme Court, Appellate Division, Third Judicial Department, No. 61–1, April 1, 1955.

The case above again illustrates the rule that an employer takes a man subject to all his infirmities. In this instance, a younger man probably would have felt no ill effects from the job. However, since the employer had hired his elderly worker, he must accept full responsibility for him when he is injured, although a younger man would not have been affected.

Jobs for Handicapped

Answers to common questions about employment of physically handicapped workers are provided in the new publication "The Handicapped Man for the Job," of which nationwide free distribution is being made by the National Association of Mutual Casualty Companies.

Most People Handicapped

The new booklet points out that most workers are handicapped to some extent, in that all are not physically qualified for all types of jobs, but that within the limitation of each handicapped person remains considerable usefulness and productivity. It answers such questions as: why should handicapped workers be hired, what do insurance companies think about handicapped workers in business and industry, what is the relation of second injury laws to the employment of handicapped workers, how can the individual company go about finding a place for a handicapped worker, what do insurance companies do to help handicapped workers get back to work, what are others doing about handicapped workers, and what assurance is there that job placement for handicapped workers is worth while?

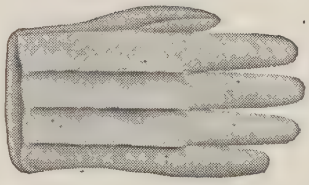
Reducing Loss Important

"As industry and business assume more responsibility for the heavy costs of accidents, occupational diseases and the degenerative changes of employees, the necessity of reducing loss becomes more critical," the booklet points out. "Whenever an injured worker is rehabilitated and returned to productive employment, everyone gains. The earnings of the worker are restored, production is increased, workmen's compensation losses are diminished, and future compensation rates are benefited."

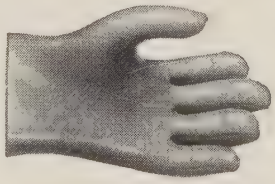
Copies of "The Handicapped Man for the Job" may be secured from the National Association of Mutual Casualty Companies, 20 North Wacker Drive, Chicago 6, Illinois.

EDMONT CASE NO. 582: World famous breakfast food manufacturer (name on request) job-tested No. 151 plastic impregnated gloves against leather faced gloves being used to handle kraft shipping containers. Result: Bought 113 dozen pairs within next 60 days after the test proved their greater comfort, safety and much longer wear.

Cost drops when gloves fit job



No. 151 Werx. Plastic impregnated.



No. 36 Monkey Grip. Plastic coated.

No. 930 Redmont. Neox (reinforced neoprene) coated.

Correct selection of the work gloves used by employees pays valuable dividends to management. After making the test of job-fitted gloves referred to in Case No. 582, above, the manufacturer reported: *"We found the No. 151 gloves were light and comfortable to wear, afforded excellent gripping action on the kraft containers, and wore considerably longer than the leather-faced gloves formerly used for which we paid approximately the same price. We have added this item to our inventory as a regular supply, and find that there are many other places in the plant where they can also be used to advantage."*

OVER 50 TYPES of Edmont job-fitted gloves are available to meet specific needs, palm coated or fully coated with Neox, various plastics or rubber, to resist cutting, abrasion, heat, cold, oils, acids, caustics, other chemicals.

EDMONT CASE NO. 609: Handling steel products in open tank dipping operation. Gloves previously used wore 2 shifts. Edmont job-fitted gloves coated with red Neox (reinforced neoprene) lasted 10 shifts.

MAKE THIS FREE JOB-TEST: Send description of your job operation, materials handled, temperature condition. Without cost, we will recommend correct gloves and supply samples for on-the-job testing.

Edmont Manufacturing Co., 1256 Walnut Street, Coshocton, Ohio

World's largest maker of coated industrial gloves, available through your industrial supplier.

Edmont

Edmont job-fitted gloves

(For details, use Key # L-11 on card on page 73)

ILO Recommendations for Safety and Health

An International Labor Organization panel of experts composed of eight leading specialists from as many countries has recommended to the ILO a series of measures to promote occupational safety and health throughout the world.

The measures include the establishment of regional institutes on occupational safety and health to coordinate ILO technical assistance activities in this field, the preparation of an international encyclopedia on occupational safety and health, and the adoption of an international convention, supplemented by a recommendation to governments, to prevent the sale, hire and use of machines not equipped with safety devices.

Coordinate Assistance

The experts have suggested that the need for coordinating assistance in occupational safety and health with that in related fields might be met by creating regional safety and health institutes, which would be permanent institutions, staffed by a team of experts in safety, health, welfare, training, management, etc. The teams could cover much wider ground than the individual experts hitherto sent out, and might prove more economical in expert manpower in the long run and have more lasting effect.

The meeting noted that numerous difficulties attended both the selection and the work of technical assistance experts. The very rapid development of technology, especially in fields such as electronics, nuclear energy and automation, has created an enormous demand for technicians, in high-paying industry as well as in public service.

The experts felt that the publication of an encyclopedia of occupational safety and health would constitute one of the most useful tasks which the ILO could undertake at the present time. The work should prove useful to industrial physicians, safety engineers, educationalists, administrators and students as well as to managements who had a vital part to play in this field.

They said the encyclopedia should take account of the wide variations in industrial conditions from country to country and from undertaking to undertaking.

The meeting noted that since the adoption by the ILO in 1929 of a recommendation concerning responsibility for the protection of power-driven machinery, the movement towards built-in safety had made considerable progress throughout the world. There was now a substantial volume of national safety legislation on the sale and hire of various kinds of industrial equipment.

Protect Safe Builders

Where built-in safety was compulsory it protected firms building safe equipment against competition from those building unsafe and therefore cheaper equipment. The experts were unanimously of the opinion that whatever responsibility was placed on manufacturers, none should be taken away from users.

The experts felt that it was desirable to adopt an international

Safety and Special Purpose
Plain or Reflectorized
SIGNS for EVERY NEED!
SAFETY FIRST — BE — CAREFUL
NOTICE THESE DOORS MUST BE KEPT CLOSED
BE CAREFUL SAVE A LIFE IT MAY BE YOUR OWN
HELP KEEP THIS PLACE CLEAN
THINK ACCIDENTS ARE AVOIDABLE FORGET THE ALIBI.
EXIT
DANGER — NO — SMOKING
WARNING CURRENT —ON—
CAUTION KEEP AISLES CLEAR
NO PARKING AT ANY TIME
EXPLOSIVES
SLOW
SHELTER AREA S INSIDE
STOP
MEN WORKING
SARGENT 1200 E.
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(For details, use Key # L-12 on card on page 73)

convention on the prohibition of the sale and hire of inadequately guarded machinery and other industrial equipment. The convention should be a simple one and confined to points on which there was general uniformity in practice throughout the world, that is, (1) the guarding of projections on revolving parts, and (2) the guarding of gearing.

Code Revision Possible

With regard to the possible revision of the model code of safety regulations for industrial establishments, the meeting drew up a list of supplementary points which might be incorporated in the code with particular reference to the textile and welding industries, on the basis of proposals made by the ILO Textiles Committee and the Permanent International Commission on Acetylene, Fusion Welding and Allied Industries.

The panel also made a series of suggestions on the classification and labeling of dangerous substances and on the preparation and maintenance of a basic list of such substances.

Help Wanted

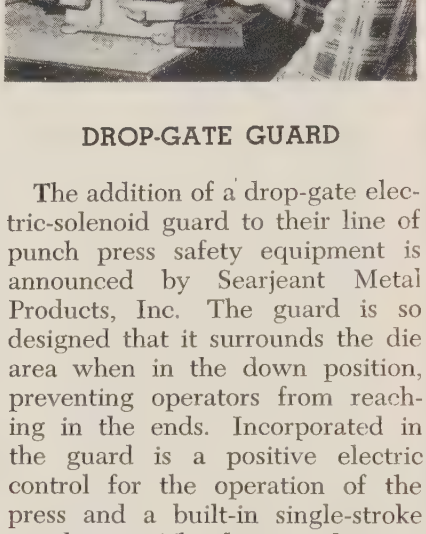
Your hobby, preoccupation, or annoyance with terminology and nomenclature problems can help an important military project. Ordnance engineering cuts across many fields of science and technology, and information for design work is drawn from many diverse fields of knowledge. If your subject field might be of interest in ordnance work, and if you have either formal or informal collections of terminologies, glossaries, specialized dictionaries, or even references to them, please contact: Allen Kent, Associate Director, Center for Documentation and Communication Research, School of Library Science, Western Reserve University, Cleveland 6, Ohio.

Several months ago, the Army Ordnance Corps initiated the preparation of a comprehensive Ordnance Engineering Design Handbook to summarize fundamental principles and basic design data. The handbook is being written to provide needed information to army ordnance and arsenal personnel and to the engineering staffs of contractors having ordnance design responsibilities. It is planned that the handbook will consist of approximately 180 sections of about 100 pages each. Completion of the first edition of the handbook is expected to require about five years. The format is designed to facilitate revision of individual sections as future developments may require.

It is a matter of considerable importance that uncertainties as to the meaning of terminology and nomenclature do not impede ordnance design and development. It is no easy matter to establish definitions for many ordnance terms that are also used in other areas of science and technology.

(For details, use Key # L-13 on card on page 73)

KEEPING UP WITH...

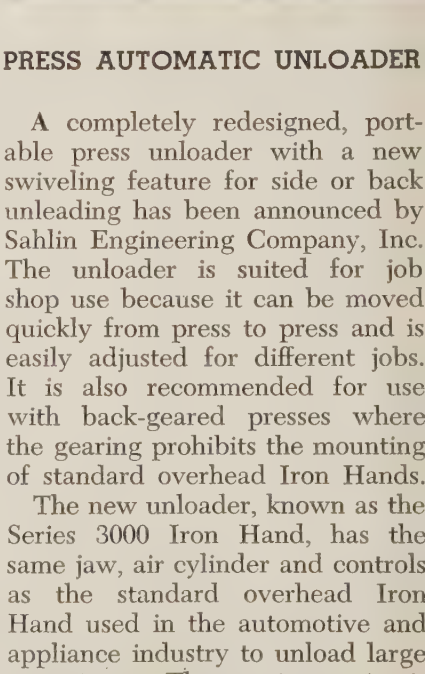


DROP-GATE GUARD

The addition of a drop-gate electric-solenoid guard to their line of punch press safety equipment is announced by Searjeant Metal Products, Inc. The guard is so designed that it surrounds the die area when in the down position, preventing operators from reaching in the ends. Incorporated in the guard is a positive electric control for the operation of the press and a built-in single-stroke attachment. The downward action of the gate causes a switch to energize a solenoid that trips the press. The upward action of the guard resets a relay mounted in the control panel so that the press can be retripped on the next downward action of the gate. The design permits very fine adjustment, so that only when the barrier is within ⅛″ or less of the bolster plate will the press be put into motion.

The guard comes prewired, ready to attach to the press. Both installation and maintenance are simple. Units are available for all size presses from bench type up to presses of 100 ton and over. For presses of over 30 ton, the press clutch mechanism is activated by an air cylinder, in which case the downward action of the guard, as it touches the bolster plate, causes the current to operate a solenoid air valve. The single-stroke feature is also available with air-operated clutch mechanism. Guard can be actuated by hand on bench presses or by foot on larger presses.

For details, use **Key # MG-1** on Inquiry Card on page 73.



PRESS AUTOMATIC UNLOADER

A completely redesigned, portable press unloader with a new swiveling feature for side or back unloading has been announced by Sahlin Engineering Company, Inc. The unloader is suited for job shop use because it can be moved quickly from press to press and is easily adjusted for different jobs. It is also recommended for use with back-geared presses where the gearing prohibits the mounting of standard overhead Iron Hands.

The new unloader, known as the Series 3000 Iron Hand, has the same jaw, air cylinder and controls as the standard overhead Iron Hand used in the automotive and appliance industry to unload large stampings. The entire unit is

✓ **Machinery Guard Series**
Other articles in Sept. and Oct.

ecent Developments in Machine Guards

mounted on a heavy steel base, on wheels, and can be rolled to a press. It can be adjusted vertically to suit the die height, and swiveled into unloading position. Since the jaw travel is in a straight line, the unloader can remove small parts at high speeds. After a ram completes its down stroke, the hand moves into the die and grips the stamping. When it has clearance, the jaw lifts the stamping, moves back out of the die and drops the stamping in a tote box. Then it returns to its original position to await the next cycle. A variety of jaws are available.

For details, use **Key # MG-2** on Inquiry Card on page 73.

CALENDER THREADER

Although calender threaders have been in use for a number of years, the McAfoos Sales & Engineering Co. has engineered the device to new standards of safe operation and maintenance. Originally hand operated, the threaders in 1950 were successfully operated hydraulically.

Now the units are constructed of aluminum and stainless steel for less weight and easier handling, and the latest models are operated by compressed air. Both as safety devices and as production tools, these threaders are widely used in the paper and other industries that calender their products.

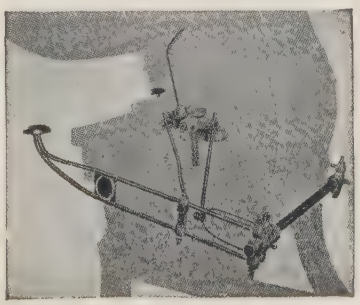
For details, use **Key # MG-3** on Inquiry Card on page 73.

IMPROVED TWO-HAND TRIP

Simplified maintenance is the feature of a newly improved safety guard for power presses. The guard is made by the John Humm Safety Equipment Co. and consists of a two-hand safety starting device. It is designed for operations that require the worker to place his hands within the danger zone of the descending ram for feeding. In order to operate the press, the worker has to utilize two separate starting handles, one for each hand, and this design gives positive assurance that his hands will be out of the danger zone.

The equipment consists of an equalizer unit, the two extension handles, and a square cross-bar that turns in self-aligning bearings. The latest models have a replaceable oilite bushing on the sliding cross-bar for easier maintenance.

For details, use **Key # MG-4** on Inquiry Card on page 73.



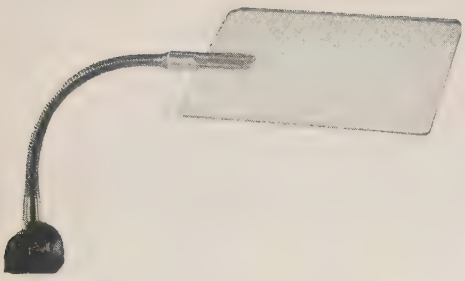
PLASTIC GUARD MATERIAL

A transparent, scratch and abrasion resistant glazing material, suitable for a broad range of safety applications, was recently announced by the Homalite Corp. The new material, Homalite CR-39, is made of thermosetting resins and should be of special interest to safety engineers and equipment designers using or specifying protective glazing. It should also interest architects concerned with buildings where explosion hazards might exist.

Company spokesmen say that the new product is immune to chemical action. Since it is also virtually unaffected by welding splatter, it should find wide application in metal-working. It is easily machined and has "light-piping" and "edge-lighting" qualities, recommending its use in instrument panels and faces. It is light weight and highly resistant to shatter, abrasion and scratches.

Homalite CR-39 is envisioned for use in such applications as safety goggles, and shields, instrument faces, grinding wheel guards, windows for viewing dangerous processes, cab glazing on power shovels and cranes, and numerous similar uses.

For details, use **Key # MG-5** on Inquiry Card on page 73.



FLEXIBLE ARM SHIELD

The flexible arm and magnetic mounting base make this eye shield fully maneuverable. Made by Standard Portable Cord Co., Inc., the new "Flexible Arm Magic Eye Shield" is especially suited for use on tool grinders, large lathes and other machinery where a mounting location is not available close to the work. The ease with which the arm moves enables the workman to adjust the shield to keep it over the work area at all times.

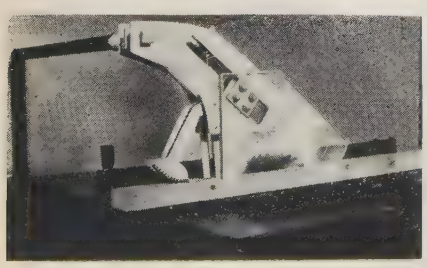
The unit has a 10 by 12 inch CR-39 Cast Optics shield. The 12 inch flexible arm is coupled to a 45 lb. lift Alnico V guaranteed permanent magnet. This model is also available with a permanent mounting fixture in place of the magnet base.

For details, use **Key # MG-6** on Inquiry Card on page 73.

TRANSPARENT SAW GUARD

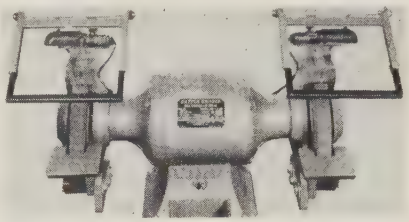
Table model circular saws can be made safe with a new gliding-action guard which lets user see all work operations clearly through transparent plastic shields. Providing many safety features, the Safety Glide Guard serves to protect during cut off, ripping, dado, and grooving work to various widths and thicknesses. It is never necessary to remove the guard and thus risk injury, according to General Scientific Equipment Co.

For extra safety, unit is equipped with unusually large and strong dual "anti-kick backs." An adjustable splitter conveniently adjusts to clear work when not in use. Tough, breakproof shields of ¼" clear plexi-glas operate separately or together. Mounted on table, floor, or ceiling, installation is fast and simple, for either tilting table or tilting arbor. Sealed ball bearings require no oiling.



Two models are available, one for commercial use and a lower priced unit designed especially for home workshop 6" and 8" saws.

For details, use **Key # MG-7** on Inquiry Card on page 73.



ADJUSTABLE GRINDER SHIELD

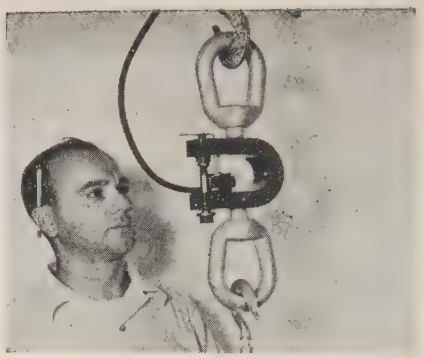
The Saf-Sight shield is a versatile eye and face protective guard for general-purpose pedestal and bench grinders. Made by the Junkin Safety Appliance Co., the safety shields are easily mounted and can be adjusted for various grinding wheel operations.

A laminated safety glass and a replaceable cover glass are held in a sheet metal frame. The mounting arm and bracket are attached to the grinder wheel guard by means of two bolts. When desired, the unit includes a light mounted below the shield. The narrow frame for the shield allows plenty of room for the operator's hands and work. It can be set at any height or angle, including side work.

For details, use **Key # MG-8** on Inquiry Card on page 73.

OVERLOAD SAFETY SWITCH

Purpose of the new Dyna-Switch, made by W. C. Dillon & Co., Inc., is to prevent overload damage to costly hoisting equipment by automatically cutting out lifting power whenever the safety maximum is exceeded. This is done by means of a massive U-shaped bar of high grade tool steel, heat treated to flex millions



of cycles without losing its resiliency. Attached between the load and the hoist, it trips a sensitive micro-switch whenever the bar is deflected beyond its pre-set operating point, thereby breaking the lifting circuit.

Accuracy of the new 20,000-lb. capacity model is within ½ of 1%, with a safety factor of 3½ to 1. This safety factor is managed by a free-riding stop bolt at the open end of the U-shaped bar. This bolt restrains the bar against deflecting more than 21,000 lbs. even though much greater loads are imposed. Lifting eyes of the Dyna-Switch are electrically welded in position. Dimensions of this compact instrument are only 18¼" long x 6¼" wide x 2⅝" deep and with a net weight of 20½ pounds. For 110 or 220/440 volt power supply.

For details, use **Key # MG-9** on Inquiry Card on page 73.

TWO-HAND PRESS CONTROLS

More than a guard, this electrical control combines safety for the operator and equipment, a means of easy manual operation of the machine, and increased productivity, according to the man-

ufacturer, Micro Switch Div. of Minneapolis-Honeywell Regulator Co.

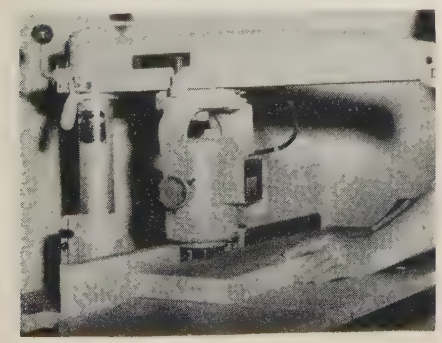
Some of the features of the "Trip Control" are: 1. Safe manual operation of the machine. The control requires the operator to hold both hands on the switches, out of the danger area, during the downstroke. 2. "Fail-safe" control. Accidental operation cannot occur as a result of a component failure. An operation can only result when everything in the control is working properly. 3. "Anti-cheat" feature. Switches cannot be tied down or otherwise by-passed in order to operate the press. 4. "Set-up and run" system. It offers protection for the set-up man and the dies while the dies are being changed. This system also prevents an accidental stroke of the ram when the motor is started. 5. Increased productivity through the reduction of operator worry and fatigue and the instantaneous electrical response of the controls. The feather-touch, finger-tip actuation of the control switches is accomplished with ounces of force and a fraction of an inch of movement. 6. Versatility through instantaneous selection (behind locked control box door) of all the combinations required for any type of clutch, any number of operators, and most punch press operation.

The manufacturer provides complete packages—including control box, hand and foot control switches, limit switches and clutch actuating equipment—ready for quick, easy installation.

For details, use **Key # MG-10** on Inquiry Card on page 73.

SHAPER-JOINTER FENCE

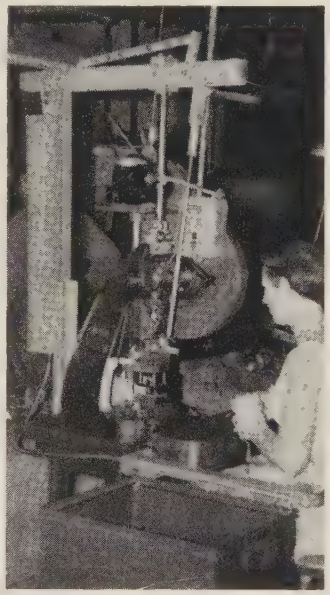
Dewalt Inc., producers of woodworking equipment for industrial and homeshop applications, have introduced a new style jointer-



shaper fence, replacing the standard wood guide when their radial-arm circular saw machine is to be used for shaping or jointing. With the motor in vertical position, and a shaper or jointer head attached to the spindle, the material is fed along the fence and through the cutting knives.

The height of the fence acts as a safety guard in protecting the operator from the moving parts of the machine which are positioned behind it. The long, rigid fence is supported at both ends, eliminating "whip." Because the fence fits into the wood table top, there is an unusually large bearing surface for the stock.

For details, use **Key # MG-11** on Inquiry Card on page 73.

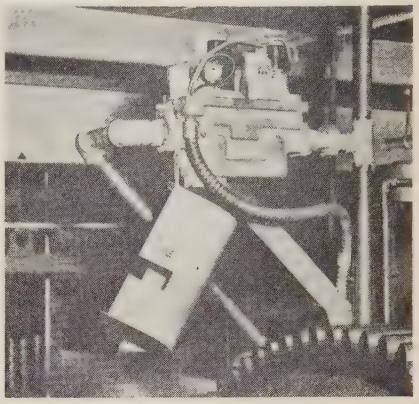


SMALL PRESS PULL-OUT GUARD

Safeguard pull-out guards are now available with a new "Junior" cam mechanism for short stroke presses, from the Safeguard Mfg. Co. These new guards are adapted to presses of one- to two-inch stroke. They are said to provide complete protection from press repeats on clutch failure but allow rapid production. Under favorable circumstances, some operators have been known to feed over 2500 pieces per hour.

To guard short-stroke presses safely, the Junior Safeguard provides a ten to one pull-out ratio with the first motion of the press ram, followed by a complete dwell for the remainder of the stroke. This action results in no pull on the operator unless his hands are in actual danger. The guard structure and mechanism are rugged enough either to remove the hands from the danger zone in an emergency, or actually to stop a press of the size illustrated.

For details, use **Key # MG-12** on Inquiry Card on page 73.

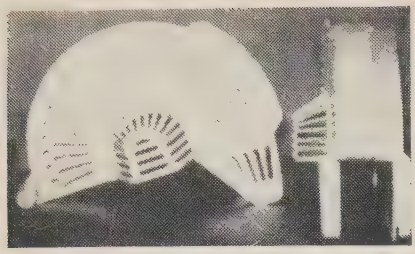


SAFETY PRESS VALVE

Increased safety for operators of large metal stamping presses is provided by a new protector air valve made by The Clark Controller Company. The company also revealed a new anti-repeat control for presses incorporating transistors instead of moving parts. The new controls are intended for use on all presses which have clutches or brakes, or a combination of the two, operated by air pressure.

For safety reasons, presses are automatically stopped at the end of each stroke by an electrically-operated valve, which exhausts air pressure to release the clutch and set the brake. Another stroke cannot begin unless each man working on the press has both of his hands depressing pushbuttons. Clark Controller's new development adds a safety unit to the operating air valve. This is a second valve, also capable of releasing the air pressure from the press clutch and of setting the brake. This valve stands by in normal operation, but operates instantly to stop the press if the operating valve fails to function properly.

For details, use **Key # MG-13** on Inquiry Card on page 73.



NEW SWING SAW GUARD

Some plants are finding it advisable to use the radial saw for dado work. To provide safety for the operator on such work, the Surty Mfg. Co. has developed a metal saw guard with a wider hood to accommodate this type of work. The other features of the guard are in accordance with the code of the American Standards Association.

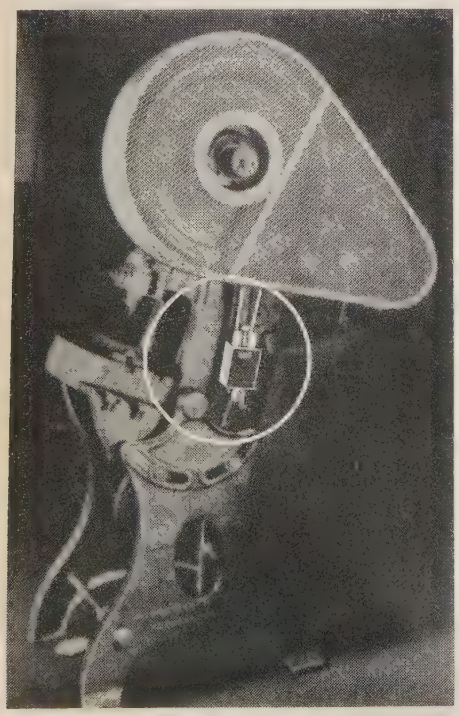
For details, use **Key # MG-14** on Inquiry Card on page 73.

NON-REPEAT UNIT

A major hazard in the operation of power presses, shears, riveters and similar machines is the danger of the unexpected second stroke or repeating. This danger can be successfully overcome by the use of a non-repeat device, according to the Surty Mfg. Co.

The unit prevents the machine from repeating when the operator holds the foot or hand lever down too long to allow the clutch to re-latch properly and securely. The device is said to contain no delicate wiring or parts that would fail quickly under continued use and vibration.

For details, use **Key # MG-15** on Inquiry Card on page 73.

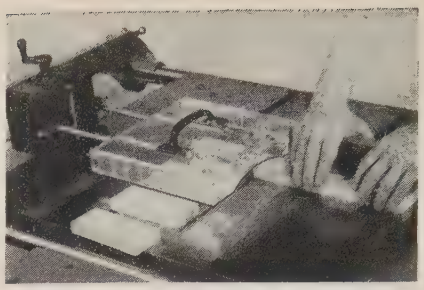


STANDARDIZED GUARD PARTS

Both barrier guards for presses and enclosure guards for belts, flywheels and other moving or rotating machinery can be constructed from the simplified, standardized parts available from Harrington & King Perforating Co. With these parts and simple hand tools, guards can be made to meet the needs of each company's individual requirements. Drawings and special fabricating equipment are unnecessary.

For shear, punch press and die guards, the perforated metal is available in various types of slotted designs. For large enclosure guards, the standard parts include: smooth sheets of 22 gauge (and heavier) steel perforated with round holes; sturdy angles perforated with screw holes; perforated bands with holes to match those in the angles and sheets, to act as frame members and reenforcements; corner gussets perforated to match the angles and bands; and sockets that can be riveted or bolted to the frame and fit into posts mounted on the floor.

For details, use **Key # MG-16** on Inquiry Card on page 73.



SAW GUARD AND GUIDE

Most operations on a circular table saw can now be guarded by a new type of safety guard. The Brett-Guard Company has introduced "the Brett-Guard and Guide" for table saws with blades of six to sixteen inches diameter.

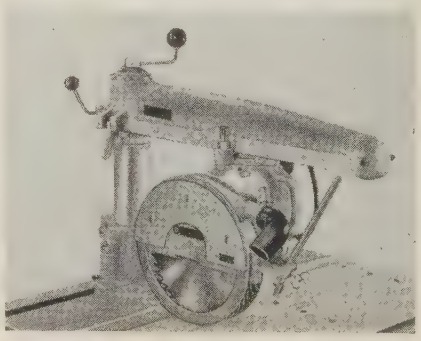
Exclusive features are the guard standard of cast aluminum, and the transparent shield of shatter-resistant one-half inch thick Plexiglas plastic which covers the saw while allowing full vision and complete accuracy in a wide variety of operations, such as mitering, cross cutting, compound mitering, ripping, rabbeting, tenoning, dadoing, feathering, diagonal sawing, template cutting, drop sawing, plowing and tonguing.

For details, use **Key # MG-17** on Inquiry Card on page 73.

RADIAL ARM SAW GUARD

A free-floating action guard for radial arm circular saws has been developed by De Walt, Inc. The guard consists of two metal circular safety rings free-mounted on each side of the saw's hood. These floating rings adjust automatically for depth and angle of cut, giving continuous protection on the lower part of the saw blade, while the upper part is completely enclosed in a metal hood.

For details, use **Key # MG-18** on Inquiry Card on page 73.



Achievements and Awards

We welcome case histories of programs that have done a good job for you in preventing accidents. Merely address your letter or memorandum to The Editor, Safety Maintenance, 75 Fulton St., New York 38, N. Y. and enclose with it an outline of how you organized and launched your safety programs or actual literature you used in publicizing them. Safety is a cooperative venture—what helps one helps all.

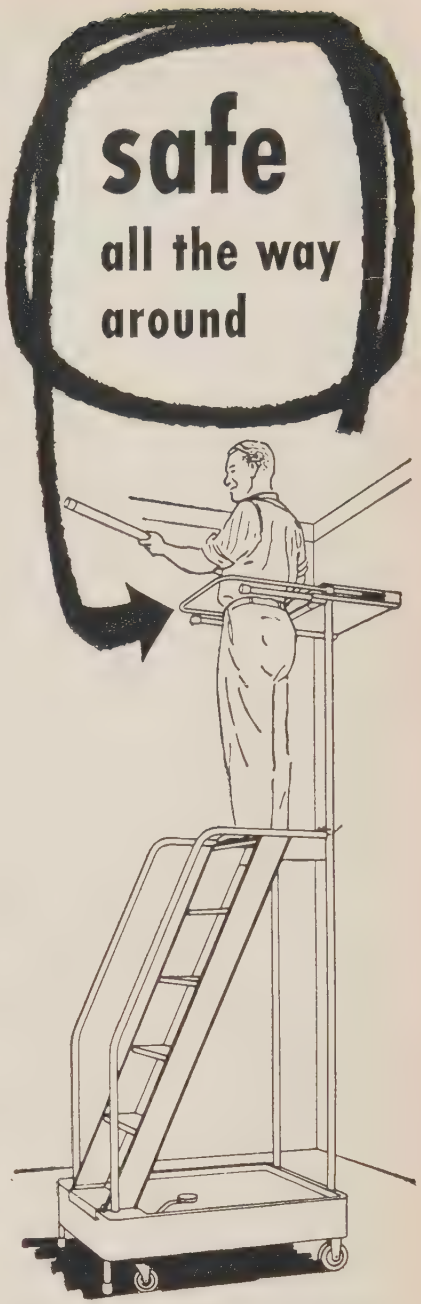
SAFE DRIVER AWARD
JOHN SMITH
has driven with a genuine regard for the lives and property of others and has had no accidents for one year
INSURANCE COMPANY
1/55
Phillips
PRESIDENT

Innumerable accidents have been prevented and hundreds of thousands of dollars have been saved through the medium of safety incentive plans throughout industry. Not only industrial management but casualty insurance companies, as experts in safety, have been in the forefront to institute various types of incentive programs, commensurate with the size and nature of the casualty insurance policyholder.

Public relations and incentives play a vital part in the safety program which is begun by casualty insurance companies immediately upon underwriting their risks. The service includes distribution of posters and bulletins, supervision of safety meetings and release of films dramatically highlighting various aspects of accident prevention.

In addition to incentive programs within the industrial plant, similar plans have been initiated for fleet and automobile risks. In many such companies, annual anniversaries are observed during which there are chosen the "safe drivers of the year." Based upon no chargeable accidents as defined by the National Safety Council, the safe driver of the year is chosen if he has completed successfully a full year without any of those accidents. A special presentation ceremony is held and usually the driver of the year is awarded an appropriately designed pin with the number of safe driving years he has achieved shown on the emblem, and upon completion of 25 or 30 years of safe driving, the winner receives a trophy or a specially engraved plate as a further mark of distinction. One such company has found that hundreds of thousands of dollars have been saved since they started the safety incentive programs.

In one insurance group known as America Fore Companies, the operations of the safety incentive program cover all types of fleets,



For overhead maintenance — up to 14 feet

SAFETY DIRECTORS like these mobile ladder-trucks because the automatic safety control locks truck—makes it a stable work platform—with 4-way guard rail protection for operator.

OPERATORS like Safe-Lad because all tools and equipment are always handy in the base tray—and they always feel secure and comfortable.

MANAGERS like Safe-Lad because it reduces overhead maintenance costs—in some cases by as much as 50%.

For complete specifications, write—

SAFE-LAD
Manufacturing Company
1003 S. E. Morrison • Portland 14, Oregon

(Use Key # L-14 on Inquiry Card on page 73)

ranging from gas and fuel, liquefied gas, dry cargo, produce as well as activities of driver salesmen. More than 8,000 specially designed pins have been presented to the drivers each year.

In industrial accident prevention, the same insurance organization steps in once again in an advisory capacity to demonstrate to management and staff that safety benefits can be achieved by inter-departmental competition, thus making employees more safety conscious. Prizes are set up in various categories, such as inter-departmental and inter-plant.

The winning department receives personalized gifts for each employee, for example, wallets, tie clips, pen and pencil sets, money clips and cigarette lighters. One of the most popular forms of incentives toward safety is the "honor award" which utilizes the company emblem attached to each gift.* This gives the employee the proverbial pat on the back from his employer and makes the award a popular as well as useful item. In addition industry often makes use of plaques and trophies which they award to the winning plant on a group basis in addition to individual awards. It has been found that actual gifts constitute an inexpensive method of rewarding consistent effort in accident prevention because those awards are usually bought with money saved by the reduction of accidents and thus they are far less costly and represent tangible results in preventing painful tragedies.

• • •

A substantial decrease in ground accidents within the Air Force's largest command, the Air Training Command, during Fiscal Year 1955, resulted in a saving of nearly a third of a million dollars. This was recently announced by Lieutenant General Charles T. Myers, boss of the command's 42 bases and quarter million personnel.

Credit for much of the reduction, according to the General, can probably be given to the incentive award of $25,000 for the personnel of the base showing the lowest composite ground accident index. This award comes from non-appropriated funds generated from profits of the Base Exchanges, theatres and other such activities not sponsored by taxes. General Myers also announced an increase in the ground accident incentive award for the current fiscal year. In addition to the first prize at the $25,000 level a second prize of $15,000 and third prize of $10,000 will also be offered.

Winner of the monetary grant for Fiscal Year '55 was Ellington Air Force Base, Houston, Texas. Runners-up were Reese Air Force Base, Lubbock, Texas, and Lackland Air Force Base, San Antonio, Texas.

* Further information concerning the awards can be obtained upon inquiry to the Editor.

• • •

St. Regis Paper Company announces that its multiwall paper bag plant at Vancouver, B. C. has completed over four years of operation without a lost-time accident, representing 904,500 manhours of work. The plant has won seven citations for superior safety records in 1954 including the National Safety Council's Certificate of Commendation, the Canadian Pulp & Paper Association's Western Shield, the British Columbia Workmen's Compensation Board Award and its Pennant. The latter was awarded for its previous three-year record without a time-loss accident.

During the first six months of 1955, the St. Regis Printing, Publication, and Converting Paper Division with mills at Bucksport, Maine; Deferiet, New York; Kalamazoo, Michigan; and Sartell, Minnesota, achieved a 70 percent decrease in its accident frequency rate.

Each mill and plant of the company competes for the Annual St. Regis Safety Plaque and divisional plaques are also awarded in each of the five divisions. The over-all lost-time accident frequency rate for St. Regis including the Woodlands Division, during the first six months of 1955 was 10.36 percent which represents a decline of 22 percent over a comparable period of last year.

• • •

The Cowan, Tenn., Plant of Marquette Cement Manufacturing Company has been presented the National Safety Council's Award of Merit for its excellent safety record. The plant maintained an injury-free period of 1,106,805 man-hours from February 2, 1951 to July 25, 1955.

• • •

The Chemical Plants Division of Blaw-Knox has received the Award of Merit from the Atomic Energy Commission in recognition of the Division's more than 1,100,000 accident free man hours of work in a three-month period last year in the construction of a multi-million dollar facility for the AEC at Richland, Washington. Blaw-Knox has received three other safety awards from the National Safety Council during the two-year project.

• • •

The best safety record in the history of TNT manufacture in this country, according to all available Ordnance Corps information, has been set by the Kankakee Unit, Joliet (Ill.) Arsenal—3,000,000 manhours without a disabling injury. The plant, operated for the government by the Naugatuck Chemical division, United States Rubber Co., will receive an award of Honor from the National Safety Council. The record was begun in October 1954, and is continuing.

The previous record, 2,500,000 man-hours, was also held by the 2,200 employes of this plant. Paul Blunt is plant manager, and John J. Raytkwich is safety superintendent.

• • •

A record of one and a half million injury-free man hours of work during nineteen months of operation at the Lewis Machinery Division of Blaw-Knox Company, Pittsburgh, has won two safety awards for the division—one from Pennsylvania Manufacturers Association, the other from the National Safety Council.

• • •

Safety statistics compiled by Pittsburgh Plate Glass Company revealed that the month of August terminated outstanding records of

two Pittsburgh Plate manufacturing units, T. R. Donoghue, manager of safety and plant protection, announced.

The Ditzler Color Division at Detroit, Michigan, recorded 1,004 no-accident days during which employees completed 2,952,345 man-hours since November 13, 1952. A lost-time accident on August 15 ended the excellent record. Earlier this year, the Ditzler unit received the National Safety Council's "Award of Honor" and Pittsburgh Plate's "Certificate of Honor."

Mr. Donoghue also announced that the safety record of the Lake Charles, Louisiana, plant of Columbia-Southern Chemical Corporation, a wholly-owned subsidiary, ended August 10. Lake Charles employees worked 263 no-accident days during which they completed 682,157 man-hours since the last disabling injury occurred on November 19, 1954.

• • •

Chemstrand's Decatur, Alabama, plant, has received a million man hour safety plaque from its insurance carrier. The employees worked one million man hours over a period of 365 days without a disabling injury.

• • •

Postmaster General Arthur E. Summerfield has accepted a special National Safety Council citation in recognition of the contributions Postal people made to community traffic safety in 1954. In accepting the citation, Mr. Summerfield explained that the Post Office Department had one of the worst traffic accident records in the entire Federal Government until a year ago when they launched Safe Driving and Driver Training and Testing programs.

"In the last quarter of fiscal 1954, accidents involving Postal vehicles were down 11 percent and accident costs to the Department reduced 24 percent. At some installations these reductions were as much as 50 percent in the number of accidents and 75 percent in Departmental costs resulting from accidents. This year again our Postal drivers have achieved an excellent record. Costs of repairs to Postal vehicles now have been halved since the intensive safety program started."

The citation was awarded the Postal Service for: 1. The part Postal people all over the country have played in stimulating further local community safety programs; 2. Cooperation in participating in national and local safety programs; 3. The work Postal people have done to establish better working relations with local traffic authorities to integrate Postal transportation and delivery patterns with the one-way street and no-parking plans of the communities.

• • •

The Award of Merit of the National Safety Council was recently presented to the P. H. Glatfelter Co., Spring Grove, Pa. for operating a total of 1,398,580 man hours without a disabling injury. The company, manufacturer of quality paper, with an outstanding safety record in all its plants, is also in first place in the Pulp and Paper Division, Group B, for its excellent record so far this calendar year.

• • •

For the fourth time in five years Davison Chemical Company Division of W. R. Grace & Co., has won the "Award of Honor" of the National Safety Council. Marlin G. Geiger, president of Davison, joined with A. B. Pettit, the company's director of Industrial Health & Safety, in accepting the award from J. W. Carothers, president of the Baltimore Safety Council.

To win the honor, Davison on a company-wide basis in 1954 scored a 58 percent reduction in frequency of accidents and a 32 percent reduction in severity of accidents from "par" figures set up by the national organization, which are averages derived from previous accident records.

In addition to the national award, the Safety Council's Award of Merit went to Davison plants at Curtis Bay, Md.; Bartow, Fla.; Perry, Iowa, and Nashville, Tenn., and its Commendation Certificate to Gretna, La., and Columbus, O., plants.

SELL SAFETY THRU INCENTIVES

Encourage teamwork with individual and departmental awards. As everyone in department or plant reach million (or ½ or ¼) accident-free man hours, present fine quality awards, personalized with your own company emblem. Make every one "HIS BROTHER'S KEEPER".

FREE DESIGN SERVICE
JUST SEND US YOUR TRADEMARK.

America Fore INSURANCE GROUP
SAFE DRIVER AWARD
JOHN SMITH
has driven with a genuine regard for the lives and property of others and has had no accidents for one year
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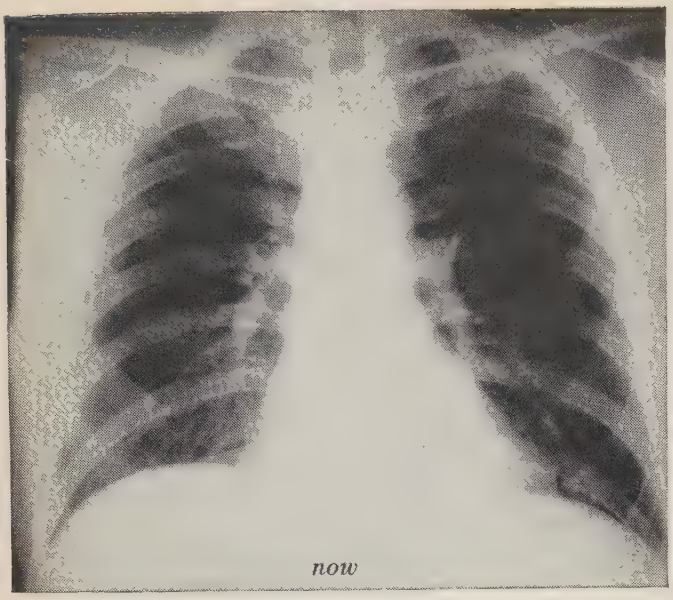
(Use Key # L-15 on Inquiry Card on page 73)



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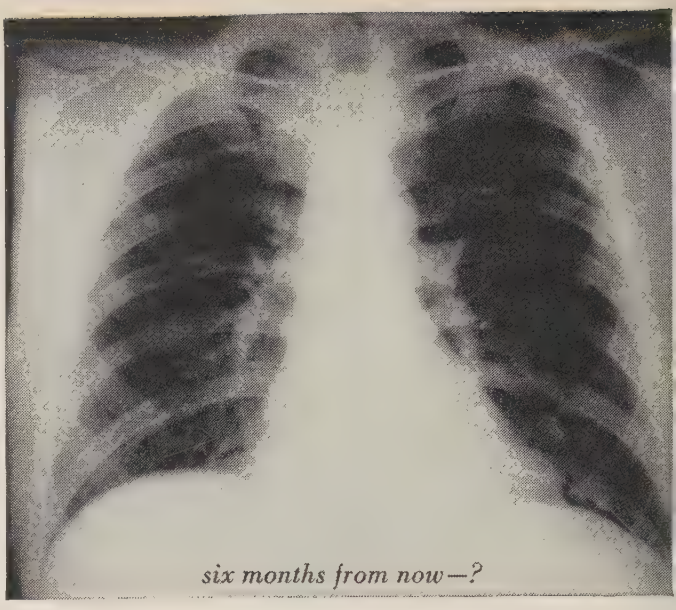

six months from now—?

TWICE A YEAR

MEN OVER 45!...Lung cancer, in men of your age, has increased so alarmingly in recent years that our doctors strongly recommend that you make a habit of having *two* chest x-rays every year: one, when you get your annual medical checkup; the other six months later.

Today, you are six times more likely to develop lung cancer than a man of your age twenty years ago. Our doctors still don't know *why* you are, but they *do* know that their chances of saving your life could be as much as ten times greater if they could only detect lung cancer "before it talks"...before you notice any symptoms whatsoever in yourself.

That's why we urge you and every man over forty-five to make semiannual chest x-rays a habit —for *life*.

To see our lifesaving film, "The Warning Shadow," call the American Cancer Society office nearest you or simply write to "Cancer" in care of your local Post Office.

American Cancer Society

The Occupational Health Dollar

Edited in cooperation with
OCCUPATIONAL HEALTH INSTITUTE
Educational affiliate of
INDUSTRIAL MEDICAL ASSOCIATION

THE SCOPE of occupational health programs practiced in industry varies from simple first-aid to highly complex activities of professional teams—doctors, nurses, safety engineers, hygienists—engaged in the solution of health problems vital to the continuation of a manufacturing process or even to the survival of a business.

The company medical service varies with the setting. It may be the principal resource of an isolated community, or it may be but a link in a great city's network of private medical care and public health facilities. In various industries, special occupational hazards and safety problems can affect greatly the complexity of the health program of the community. In companies with foreign branches, the health program must concern itself with broad factors of world health.

Every year more and more companies—large, medium and small—are establishing industrial health programs or expanding the ones they have. The reason for this is that industry has recognized a sound employee health program as another efficient management operation, as important a function as sales activities and production.

Small Plants Please Note

Every company—**no matter what its size or product**—can have effective medical services and reap the benefits that flow to all concerned, employee as well as employer. **The simple elements of a successful program will work in a shop with 10 employees or in a factory with 10,000 on the payroll.** Like all other industrial management techniques, they can be applied so that they meet the needs and problems of the individual company, well within its financial means and available facilities.

Successful preventive health programs in companies of all sizes have a common characteristic: they are as much a part of the day-to-day operations of a plant as production, sales or safety. To assure the wholehearted cooperation of employees, it is necessary that management enthusiastically support the program and make clear to them that the program's primary function is to maintain the health of the individual worker. The benefits to management are healthy employees.

The difficulties of reducing the intangibles of a health program to profit and loss figures are obvious, because no one standard is followed by companies in recording or reporting their experiences. However, the experience of thousands of companies has established the fact that in addition to increased efficiency, better employment relations and various other benefits, a health program definitely pays dividends in dollars and cents.

Days lost due to illness or accident disability are inevitably associated with disruption of production. In addition, it directly affects sales and, therefore, profits. Illness even indirectly attributable to occupational injuries or disease may also affect compensation costs. While there is an irreducible minimum number of days lost due to illness and accident, there are ways and means to cut losses to arrive at this minimum through a preventive health program. The value of an industrial health program can also be estimated in the benefits that result from early diagnosis and prevention of more serious illnesses because of early medical and surgical care. The number of days lost because of minor injuries and illness greatly outnumber days lost for serious diseases. When minor injuries are treated early, complications and lost time are kept at a minimum. It is also possible through preventive medicine to treat people with serious diseases early enough to avoid catastrophic illness.

In evaluating an industrial health program, it is essential to realize that even simple illness is the

cause of a majority of all absences and may be a contributing cause of many accidents and resulting compensation payments. Frequently, even though the disability is not severe and the employee is able to stay on the job, it causes a substantial money loss to the employer by lowering the employee's efficiency and adversely affecting production.

The experience of a packing plant with about 500 employees demonstrated a typical example of savings to management through a sound health maintenance and safety program. During operation of its program, the plant's accident frequency rate had dropped more than 86 percent. Another reported receiving a retroactive compensation credit from its insurance carrier of 22.6 percent, because of excellent accident and illness experience.

As to what "my management should invest" in the development of an employee health program, few suggestions have been found to be applicable to the individual company. It has been demonstrated by the U. S. Public Health Service that the expenditure by a company of $8.00 per man per year on a health program should yield a $12.00, or a 150 percent return per year to that company. However, reliable sources indicate an expenditure of from $18.00 to $32.00 per employee—depending upon the size of the company's work force—is necessary for a good medical program. It can readily be seen that the per capita cost for a company of several thousand employees would be far less than that of a small company for, comparatively, the same plan. It has been belabored that the good will or public relations of a company cannot be measured in dollars and cents. This philosophy might also be applied to a company's investment in employee health care. Nevertheless, the American Management Association claims that "the medical dollar produces more than any other dollar spent by industry."

At right is a replica of the "certificate of Health Maintenance" scroll, a badge of the successfully instituted industrial health program.

The standards for certification established and approved by the Industrial Medical Association are adaptable to fit companies ranging from as few as 50 employees to 25,000 or more. Those companies meeting these standards are awarded the scroll by the Occupational Health Institute.

The certification service is free, and each industrial medical unit of a multi-unit company must be evaluated individually.

To apply for a survey leading to certification, companies should communicate with the Occupational Health Institute, Inc., 6 East 39th Street, New York 16, New York. Copies of the OHI Service Bulletin, "Your Company—Why An Accredited Medical Program?", will be sent upon request.

The

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The John Doe Company

WHICH HAS COMPLIED WITH THE STANDARD FOR MEDICAL SERVICE IN INDUSTRY AS ESTABLISHED AND APPROVED BY THE INDUSTRIAL MEDICAL ASSOCIATION

I

THIS establishment has an organized medical department with competent medical staff, including consultants. It has policy, procedures and facilities for adequate emergency dispensary and hospital needs and personnel to assure efficient care of the ill and injured.

II

MEMBERSHIP on the medical staff is restricted to doctors and/or nurses who are (a) graduates of acceptable schools of learning with degrees of Doctor of Medicine and Registered Nurse respectively, in good standing and licensed to practice in their respective states or provinces, (b) competent in the field of medicine and nursing as applied to industry, (c) worthy in character and in matters of professional ethics.

III

FACILITIES are available for the performance of competent preplacement and periodic medical examinations in keeping with existing needs of the organization.

IV

A system of accurate and complete records is maintained. Such records include, particularly, a report of injury and illness, description of physical findings, treatment, estimated period of disability, and results, as well as other information pertinent to the case or required by statute for Workmen's Compensation claims and other purposes. All medical records are regarded as confidential material, filed under medical supervision, and maintained only in the medical department.

V

EMPLOYEES requiring special care are referred to competent consultants.

VI

THE medical department has general supervision over the sanitation and industrial hygiene of the plant which has to do with the health and medical welfare of all employees.

This certificate is hereby granted

Chairman, Board of Trustees
Occupational Health Institute

District Counselor

Health and Safety Programs Possible ...for even The Smallest Plant

The Occupational Health Institute points out that it is possible to practically banish occupational injury and accident from industry. **Company size has no bearing on the problem—thousands of smaller companies have done so.** These companies recognize that safety is as important a function of their operations as sales and production and that a safe operation is an efficient, well planned one. They made it a prime responsibility of top management.

Accidents drop, occupational diseases are reduced and compensation insurance premiums are lowered, when such a program takes effect. These are the tangible benefits that can be measured in terms of dollars and cents. In addition, companies find that employee morale is increased, employee-employer relations benefit, and public and community relations are improved.

The chief purpose of a safety program, often overlooked, is to develop a "safety conscious" attitude both in top management and its key people. Management must accept safety on a par with responsibility for quantity and quality of production and sales. Key personnel must be impressed by the fact that they have the responsibility for carrying out safety activities and that safety is a normal and vital part of their jobs.

The better-recognized objective of a safety program to find the causes for accident and remove them—is fairly obvious. However, it's not as simple as it looks in writing. Rarely, if ever, is a single factor the cause of an accident. Behind practically every accident is a chain of factors.

Accident causes fall into two categories:

1. **Human causes:**
a. Faulty instruction
b. Poor discipline
c. Lack of concentration
d. Unsafe practices
e. Mentally unfit
f. Physically unfit

2. **Mechanical and material causes:**
a. Physical hazards
b. Poor housekeeping
c. Defective equipment
d. Unsafe building conditions
e. Improper working conditions
f. Improper planning
g. Improper dress or apparel

An analysis of the records of past accidents possibly will point out a hazardous job, condition, place or practice. In checking through records, look for the chain that led to an accident.

Following a plant inspection and an analysis of past accident records, several conditions and practices which require correction will have been seen and recorded. An operative problem will have been recognized. Control of such problems is a prime function of competent cost-conscious management.

Hazards fall into three classifications:

1. Hazards which can be eliminated immediately, such as unguarded machinery, poor housekeeping, defective tools and equipment, lighting, etc.

2. Hazards which cannot be eliminated immediately, such as unsafe machine design and improper layout of machinery and unsafe processes. While plans are made for eventual correction, control to minimize risks should be immediately set up.

3. Unsafe working methods which can be eliminated through employee training. Every employee should be thoroughly indoctrinated in his job with respect to safety.

A safety program must be designed to suit the particular needs of each plant. Programs vary widely in detail and procedures, but the elements dealing with human relationships and technical arrangements are always present in successful plans.

In setting up a safety program, it is vital that the safety work be fitted into the work-a-day routine of the company's operation. Most safety activities fit naturally into activities that are part of plant routine. Safety is not an isolated program. It is a definite part of sound operating procedures.

Step 1

The first step in carrying out the program is to set up a safety organization whose prime function is to enlist and maintain the interest and cooperation of every man and woman in the task of preventing accidents.

While the organization should fit the needs of the individual plant, the following two elements should

(Continued on page 51)

Ready . .

BATTLI

A new instrument which measures ozone content of the atmosphere continuously by photoelectric methods goes into action at Los Angeles. Scientists checking it over hope that it will help explain what part sunshine plays in creating smog.

IN THE THICKLY POPULATED 1630 square miles of the Los Angeles Basin smog is both the current No. 1 economic problem and the chief irritant of 5,000,000 people.

It is also a fighting word, a platform for political campaigns, a gag on radio and TV—and a very serious threat indeed to the continued growth of the entire Los Angeles area.

Smog vs Air Pollution

Authorities on the subject differentiate between smog and air pollution. By smog they mean the eye-irritating, acrid substances that cause vast discomfort to humans and damage to plant life.

They point out that the Los Angeles Basin may have a high incidence of air pollution without having all the smog symptoms, despite the fact that the same critical conditions are present as when smog occurs. Thus, on a day when there is no wind, a low temperature inversion and approximately the same concentration of combustion products in the air, there may or may not be plant damage.

What is responsible for this apparent anomaly, no one yet knows. It is one of the big questions being investigated by the Air Pollution Foundation and other governmental and scientific agencies engaged in smog research. When the answer is found, the first phase in the fight to eradicate smog will be over.

Although the exact components of smog remain obscure, the authorities are clear that it results from a combination of man's actions and nature's meteorological and geographical caprices.

Man with his industries, automobiles, busses, trucks, and incinerators provides much of the raw material out of which smog presumably evolves. These are mainly hydrocarbons, combustion products, and other vapors. Nature inadvertently contributes to the problem an "upside-down atmosphere" in the Basin, a mountain barrier on three sides and low average winds off the Pacific Ocean. All of these factors reduce ventilation in the area to a minimum and make it a definite incubator for smog. However, much additional research is needed to find out if a host of other organic compounds in the atmosphere are involved, their sources, and the exact nature of their reactions.

What Is Smog?

Dr. W. L. Faith, vice-president of the Air Pollution Foundation, lists the 10 big scientific question marks that have to be answered before smog can be reduced:

1. Do certain gases in the air (hydrocarbons and nitrogen oxides)—strongly suspected of being major causes of smog—change in the presence of sunlight to produce an eye irritant? If so, are some members of the hydrocarbon family (raw gasoline contains hundreds of these) more to blame than others?
2. Does the smoke or gases from incinerators contribute to eye irritation?
3. Do industrial fumes or smoke cause or contribute to irritation of the eyes? If so, which specific gases or pollutants?
4. Do any of the gases from the sources named contribute to reduction of visibility, even though invisible as emitted?
5. What are the actual plant damaging substances in the air?
6. What are the actual eye irritants in the air?
7. Are there any compounds yet unmeasured in the air which are responsible for smog?
8. Are there any "unknowns" which up to now are not even suspect?
9. Are any temporary procedures ready to hand which can be used to control smog on a short-term basis while permanent control methods are being developed? What would be the economic consequences of adopting any such method?
10. How can the hydrocarbon nitrogen oxide content of auto exhaust be controlled?

Aim . . . Fire! . . . in the . . .

AGAINST SMOG

Up to now the precise chemical nature of smog has baffled scientific investigators. The best known theory today is that smog is the result of photo-chemical reactions involving hydrocarbons, oxides of nitrogen, and sunshine.

It is known that the presence of smog is signaled by irritation of the eyes and respiratory tract sometimes accompanied, during severe attacks, by nausea or mental depression. Beyond this, the physiological effects of smog on humans are largely unknown, despite various and conflicting claims to the contrary.

Smog definitely damages plant life. In fact, damage to vegetable crops by smog is estimated at several million dollars per year in the Los Angeles Basin.

Picturing the Los Angeles smog problem from an engineering standpoint, Dr. Lauren B. Hitchcock, president of the Air Pollution Foundation says:

"Take a box 1600 square miles in cross section, and one mile high. It holds ten billion tons of air. Put five million people in it, with a couple of million chimneys, perhaps 10,000 assorted industrial stacks, one-and-a-half million incinerators, and two-and-a-half million motor vehicles.

"Burn in these combustion devices about 60,000 tons per day of fuel oil, gasoline, gas, and rubbish, and you've got an idea of the air pollution situation in the Los Angeles basin.

"In our high school chemistry we were taught that these fuels consist largely of carbon and hydrogen, which burn to form harmless carbon dioxide and water. That this was an ideal far removed from practice, was not made clear. And it is exactly this difference between theory and fact that gives rise to man's modern urban air pollution problem."

The Los Angeles Basin is a natural atmospheric "trap" because of its geographical location and peculiar meteorological conditions. It is a low, flat, expansive valley generally surrounded on the north and east by mountains. Prevailing winds are from the west, thus blowing toward the mountains.

During much of the year a temperature inversion prevails over the Basin. A temperature inversion is a condition in which warm air is present over cooler air, acting as a lid.

Inasmuch as cold air will not rise through warm air, all air pollutants discharged into the cooler air are held near the earth, thus preventing air pollutants from escaping upward. The mountains surrounding Los Angeles Basin combine with the light winds to prevent horizontal spreading. When the inversion is at

Fluctuations of the ozone content in the atmosphere during an average Los Angeles day are charted at right in one of several checking stations spotted throughout valley area to check on content of smog.

Volunteer cry-baby at right dons plastic mask and is subjected to night air treated by artificial sunlight to test the effect of smog's eye irritation.

At research institute scientist observes the effect of oxidant concentrations on plants. Damage to crops is a serious L.A. problem.

a low level, pollutants are more concentrated and, therefore, more likely to form eye irritants and oxidants, to damage plants and to reduce visibility.

Variety of Contributors

Sources of smog in the Los Angeles Basin include a great variety of contributing materials, and it is this variety that has made it extremely difficult to point to single causes. The contributing materials are believed to contain some components of all the gases, liquids, and solids found in man's environment, natural or manufactured.

Research so far indicates that about 60,000 tons of various materials are burned each day throughout the Basin, and it is generally agreed that incomplete combustion of these materials results in over 3000 tons of air pollutants being discharged daily into the air.

The main materials burned in the Basin are natural gas, fuel oil, gasoline, and rubbish. More than 80 percent of Los Angeles' supposedly significant air pollution thus far identified is the result of incomplete combustion of these materials. It is generally agreed that the three chief contributors are motor vehicles, industry, and rubbish burning, in that order.

In the Los Angeles Basin are registered more than 2,350,000 motor vehicles of all types, which burn nearly 5,000,000 gallons of fuel per day. Of this total, varying amounts have been estimated to remain unburned or partially burned. Auto exhaust also contains oxides of nitrogen, sulfur, and carbon. Carbon dioxide is harmless in low concentrations and carbon monoxide, though toxic in auto exhaust concentrations, has never been found in our atmosphere in amounts approaching known toxic levels. Probably about half of the 3000 tons of pollutants discharged into the Basin atmosphere each day comes from the fueling and operation of motor vehicles. While evidence is not yet conclusive, there are strong indications that auto exhaust contains smog-formers.

Of course, in the final analysis the public isn't to blame for the fact that the automobiles it buys discharge these pollutants into the air. That is primarily a problem for the automobile industry, which is currently spending well over a million dollars a year to develop devices that will sharply reduce potentially noxious gases.

The public, however, can contribute measurably to reducing smog by keeping their automobile engines at best possible operating efficiency through proper adjustment of carburetors, regular cleaning of spark plugs, and prompt replacement of worn piston rings. In fact, it is reported that periodic attention to the average automobile by a mechanic can reduce automobile exhaust hydrocarbons by as much as 50 percent.

Another way in which the public can assist in smog reduction is by improving its driving habits. Each sudden release of the accelerator costs motorists money in wasted gasoline, and releases unburned or partially burned fuel into the air.

It is estimated that more than 15,000,000 pounds of combustible refuse is burned each day in the Los Angeles Basin, resulting in more than 1,000,000 pounds of unnecessary air pollutants. A large part of this is still burned in so-called backyard incinerators.

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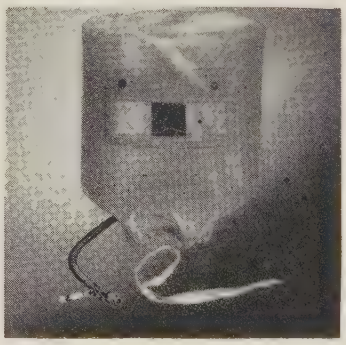

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(For details, use Key # L-20 on card on page 73)

The Foundation sees the incinerator as a definite suspect in the smog lineup of culprits. And last December it called the nation's experts here to discuss the economic, scientific, and health effects of incinerators and to determine what to do about them. Their unanimous recommendations were that under Los Angeles conditions, refuse disposal in any current type of incinerator, backyard or municipal, should be discontinued as soon as alternative disposal means can be provided. Chief among the alternatives recommended was sanitary landfill.

What Price Smog?

These are the major factors presently believed to contribute to smog. There are many more that may become more or less important as research continues and their secrets are revealed. How long this will take and how much money it will cost, no one knows.

Regarding cost, the Los Angeles area has spent several billions of dollars for highways, $750,000,000 on its water supply, $300,000,000 on its sewer system. The community ultimately may have to spend some comparable amount for clean air.

"Final solution of Los Angeles' smog problem depends on the new knowledge we gain from scientific projects now seeking answers to these questions, on continuing basic research, and—possibly above all—on fitting together and making the best use of all the facts we have as we go along," according to Dr. Faith.

Seven recent developments or adaptations of scientific instruments by various individuals and scientific agencies which are expected materially to reduce the time required to lick smog. These new instruments are:

Nitrogen Oxide Recorder—A measuring device which makes it possible to determine how much nitric oxide and at the same time nitrogen dioxide there is in smoggy air.

Hydrocarbon Recorder—A device to measure directly the amount of hydrocarbons in the atmosphere. This is important since it may provide a means of monitoring the effectiveness of controls over gasoline and exhaust vapors.

Particle Counter—This new particle counter automatically and continuously counts the number of particles in the air by size groups. Through its use it is expected that new light will be thrown on the aerosols (aerosols are a suspension of very small particles, either solids or liquids, in the air) responsible for the reduction of visibility.

The Lightweight Meteorograph—This device is for measuring temperature, pressure, and relative humidity. A very small version of this standard meteorological tool can be raised to heights of 3 thousand feet by balloons. Using it, scientists will learn a great deal more about inversion characteristics over the basin.

Visual Range Meter—This instrument has been recommended to the Air Pollution Control District for use in Los Angeles.

Oxidant Recorder—(With precursor device attached) This measuring instrument records at the same time both the amount of oxidant (gases such as ozone) in the air and the materials in the atmosphere which will form oxidant when exposed to the sun.

(Continued on the next page)

The Ozonometer—a photoelectric instrument has been developed for the automatic, around-the-clock measurement of ozone—the poisonous, smelly gas suspected of being the major cause of smog in the Los Angeles atmosphere.

"Soon we will know accurately how much poisonous ozone there is in Los Angeles' smoggy air," says Dr. Hitchcock. "After that, by making actual measurements with the new instruments in various portions of the Los Angeles Basin, we will find out where most of the concentrations of ozone occur. Armed with this information, the remaining two problems—what causes ozone and how can we get rid of it—will be well on the way to solution."

Dr. Hitchcock explains that removal of ozone from Los Angeles air might possibly do away with the eye irritating effects of smog, even though other pollutants remain.

"Ozone generally is accompanied in the atmosphere by other suspected smog formers called oxides of nitrogen, which are likewise poisonous and odorous. In the light of present knowledge on the subject, ozone might be eliminated in the air if these oxides of nitrogen and other smog suspects—organic compounds including hydrocarbons from auto exhausts and other sources—also can be removed," he says.

Ozone is a sort of blue-colored sister of oxygen. It is one of the most fascinating and dangerous gases known, roughly 100 times as poisonous as carbon monoxide, although the latter gas is much more widely known as a killer. The normal amount of ozone on the earth's surface is three or four parts per hundred million, but in smog the concentrations may be as high as fifty. Medical scientists have found that 150 parts of ozone per hundred million are dangerous to health.

Test surveys with the new ozonometer have indicated that there is (1) a relationship between oxidants rising and eye irritation increasing; (2) that eye irritating substances, just as all pollutants, increase in concentration as they travel over regions of heavy population and industry.

Other preliminary findings outlined by Dr. Hitchcock include:

1. Oxidant began to increase all over the Basin at about the same time of day, suggesting strongly that the material from which the oxidant was formed was widely distributed.
2. The peak of oxidant formation shifted one hour when human activity shifted from daylight to standard time, suggesting that the pollutants which form oxidants originate from human activity.
3. Oxidant values show a close relationship with intensity of the sun's radiation at most observing stations, but plant damage does not correlate with oxidant value, eye irritation or inversion height, and cannot be explained in terms of any of the pollutants measured in aerometric surveys.
4. The highest concentration of particulate matter was found in the downtown district of Los Angeles on November 26. This was 1,220 micrograms per cubic meter of air. Highest value in Pasadena was approximately one-half this. The average for particulates (smoke, dust, fly ash, etc.) in the central business district indicated a heavy load, which surpassed that of many cities in the nation.
5. Carbon monoxide and hydrocarbons reached their peak at a monitoring station at 8:30 A. M.
6. Sampling aloft, by blimp, showed that nitrogen oxides increase 50 to 100 percent from the surface to the base of the inversion layer, then decrease through the layer. Oxidants tend to increase to the base, then decrease more markedly than nitrogen oxides going through the layer.

A Glance at the Future

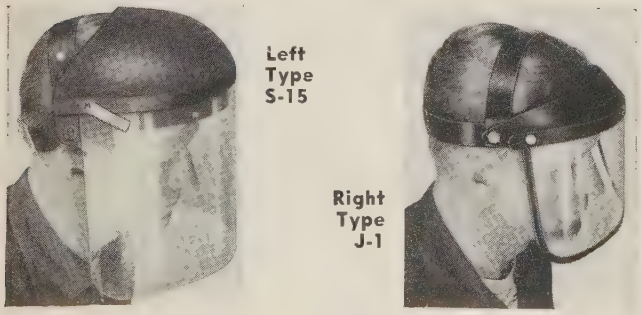
Statistical studies indicate that by 1960 the Los Angeles Basin will have a population of about 6,200,000 persons, 3,000,000 motor vehicles, many more industrial plants, and proportionately more combustible rubbish requiring disposition of one sort or another.

It is to be fervently hoped that the concerted and cooperative efforts of all agencies involved in the battle against smog will result in final and complete victory. But such victory cannot come from research or enforcement or legislation alone, or from any combination of the three. There must be, most of all, not only a strong desire on the part of every citizen, but voluntary action. If every person could put his own "house in order"—and that means his plant, his car, and his rubbish disposal—without waiting for laws and citations—without waiting for his neighbor to do it first—the problem could be rapidly reduced while the auto exhaust control and the like are being readied.

Pictures by courtesy of Air Pollution Foundation.

MARTINDALE

FACE SHIELDS



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RUBBER - NEOPRENE PLASTIC COATED INDUSTRIAL GLOVES

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Industrial Hygiene Foundation Meeting

Representatives of industrial management and the health professions will have an opportunity to get together on the solution to industrial health problems at the 20th Annual Meeting of Industrial Hygiene Foundation to be held at Mellon Institute, Pittsburgh, Pa., on November 16 and 17.

Some 700 leaders in the industries and professions from all parts of the United States are expected at technical sessions dealing with the medical, legal, engineering, chemical and toxicological phases of occupational health and will attend the main gathering at which topics of general interest and concern will be discussed. The 370 member companies of the Foundation will be represented.

Presenting the keynote address at the main session on November 17 will be Mr. A. R. Fisher, President of Johns-Manville Corporation, who will discuss the economic aspects of industrial health. Topics to be discussed at the various sessions include: graduate education for industry's professional personnel, industrial medical departments, applications of atomic energy, trends in workmen's compensation, relations of man to machines, air pollution, industrial hygiene aspects of ultrasonics.

Specific aspects of industrial health will be taken up at the technical conferences on the first day, which include panel discussions and informal sessions, with individuals from the floor directing questions to the speakers and contributing information gained through their own experiences.

A joint Medical and Chemical-Toxicological Conference is an innovation at this year's meeting. The interdependence of the two fields in any truly effective preventive medical program will be demonstrated. Two toxicologists and two industrial physicians will describe research results for detecting early functional changes caused by excessive exposures to toxic materials, and their application by the medical profession. Management personnel are invited to participate in this session also.

Dr. C. Richard Walmer, Managing Director of the Foundation, is in charge of arrangements. The meeting will be opened with a welcoming address by Dr. E. R. Weidlein, President of Mellon Institute.

Health and Safety Programs

(Continued from page 45)

always be present. The owner or manager should take and retain responsibility. Actual execution of the program may be delegated to another top-ranking executive, **but the owner or manager should continually show his interest in a safe plant. It is this element that makes active prevention programs effective** regardless of the form of organization.

A safety committee is of substantial assistance in an accident prevention organization. An executive committee composed of key personnel, foremen and supervisors, the plant doctor and nurse, should formulate

policies and consider disciplinary matters, reports and suggestions.

Through a second committee composed of working employees, many unsafe conditions and practices in the plant will be brought to light.

To develop policy and procedure, the organization should include planning control of physical hazards, planning safe operating practices, planning programs to enlist employee cooperation in safety training, safety discipline procedures, accident investigations, passing on specific problems and suggestions.

Step II

In putting the procedure into practice and following it through, employee cooperation must be enlisted. All usual channels of employer-employee communications are used in this task—letters, bulletin boards, meetings, house organs, and, most vital of all, personal contact, preferably by the individual's supervisor. Insurance companies, local safety organizations and the National Safety Council are excellent sources of materials and information that can be used for this task.

The key figure in safety work is the foreman or supervisor. He must realize clearly that safety is as much, and as important, a part of his job as production. He must work safely, teach safety and, when necessary, enforce safety.

The next element in the program is inspection of the plant. This is the chief means of uncovering hazardous conditions. In addition to continuing in-plant inspection maintained by the plant personnel, many plants have periodic inspections by outside safety consultants or engineers.

Step III

Inspection by an out-of-plant expert is a vital part of the plant inspection program. He will appraise the safety performance of the plant, determine what improvements should be made, make practical recommendations, and assist in setting up the in-plant continuing procedure. Expert safety advice may be obtained by sharing the services of an engineer with other companies in the community, all companies thus obtaining competent service at relatively small cost.

Step IV

The final step in the plant program is the investigation of accidents. They supply information regarding hazards or bad practices that have been overlooked. Careful investigation should be made of non-serious mishaps as well as of serious ones. Management should investigate the minor accident with the hope of preventing the severe one.

As the program develops, it will be found necessary to make safety rules and to insist that they be obeyed, just as it is necessary in other aspects of employer-employee relationships.

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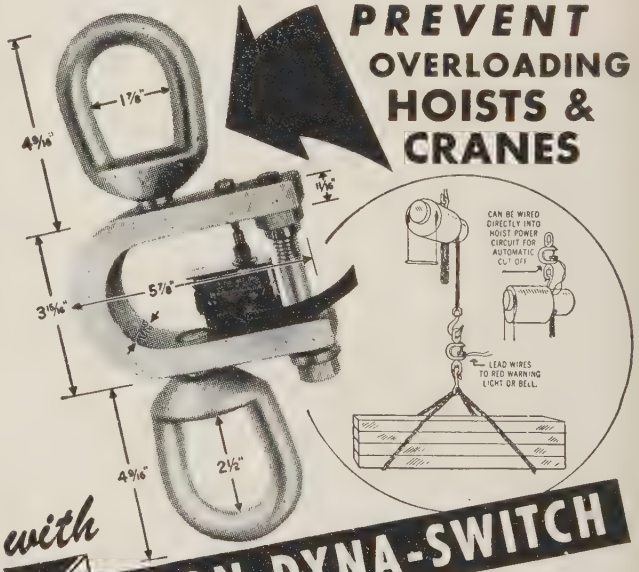
(For details, use Key # L-23 on card on page 73)

PREVENT OVERLOADING HOISTS & CRANES



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When load limit is exceeded, Dyna-Switch trips a sensitive micro-switch which may be connected to a warning bell or light. If Dyna-Switch is connected into the motor, the overload automatically cuts motor out, and load must be returned to floor and surplus weight removed before pickup can be completed.

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(For details, use Key # L-24 on card on page 73)

School Shop Safety

A new pamphlet, prepared by the U. S. Department of Labor's Bureau of Labor Standards in conjunction with the Office of Education is designated to encourage safety instruction in school before the minor takes his first job in industry. It provides the vocational shop teacher with a direct approach to the student in emphasizing the importance of safe work habits beginning with his school experience in preparation for later employment.

While the pamphlet was prepared especially for use by vocational shop teachers of trade courses, it can also be used by industrial art shop teachers, by employment officials in industry, by labor organizations, and by State Labor Departments.

Suggested uses of the pamphlet by teachers are given in the flyer-insert. A limited number of free copies of the pamphlet, "School Shop—Learn Safe Work Habits Here," are available from the Bureau of Labor Standards, U. S. Dept. of Labor, Washington 25, D. C.

Sound Slidefilm Guide

More than 1,000 titles are listed in the sixth edition of the Sound Slidefilm Guide published by the DuKane Corporation, St. Charles, Ill. It reveals the widening use of the filmstrip with recorded sound as an educational tool.

The guide lists and describes individual sound slidefilms and programs for education, training, and inspirational use in business, industry and schools. Among the broad areas covered by these films, subjects of particular interest to industry include: labor and labor relations, business and economics, health and hygiene, sales and personnel training, advertising, industrial and traffic safety, and human relations.

In the past year, professional standards for sound slidefilm equipment designers and engineers have been set up and published, and the new films incorporate those standards. Source of each film is noted in the guide along with its availability, whether by rental, purchase, or free loan. Sale prices are listed for films obtainable by purchase. Also included in the booklet is an alphabetical list of titles, and a separate, complete list of sources. Priced at $1.00 per copy, it is available from the Audio Visual Division of DuKane Corporation, St. Charles, Ill.

Butch Learns Good Housekeeping

Remember "Butch"—the little guy who's learned a lot about safe practices since he became an industrial worker about five pamphlets ago? Well, he's back again, this time in the latest of the popular safety series, published by the Bureau of Labor Standards for industrial workers in all sorts of plants. Previously, you've met Butch learning the hard way about electrical gadgets, machinery, heavy lifting and whatnot. Now it's good housekeeping.

While Butch gets into all sorts of trouble, he usually learns fast. In this latest pamphlet he's pretty riled when the Boss mentions housekeeping as one of his responsibilities. As you can guess, the adventures and misadventures of Butch on the rest of the tour develop into a two way lesson in housekeeping.

Free copies, in a limited supply, are available from the Bureau of Labor Standards, U. S. Department of Labor, Washington 25, D. C. Quantities may be purchased from the Superintendent of Documents, Government Printing Office, Washington 25, D. C., at 10 cents each, with a 25 percent discount on bulk orders of 100 or more. Remittance should accompany all purchase orders which should be directed to the Superintendent of Documents.

Hotel Safety Guides

An effective plan for accident control in hotels of all sizes and types and practical methods of hotel fire prevention are the subjects of two pamphlets just published by the Accident Prevention Department of the Association of Casualty and Surety Companies.

The pamphlets present comprehensive lists of accident and fire prevention measures. In addition, they are designed to provide hotel management and personnel with flexible plans for creating and sustaining interests in fire and accident prevention.

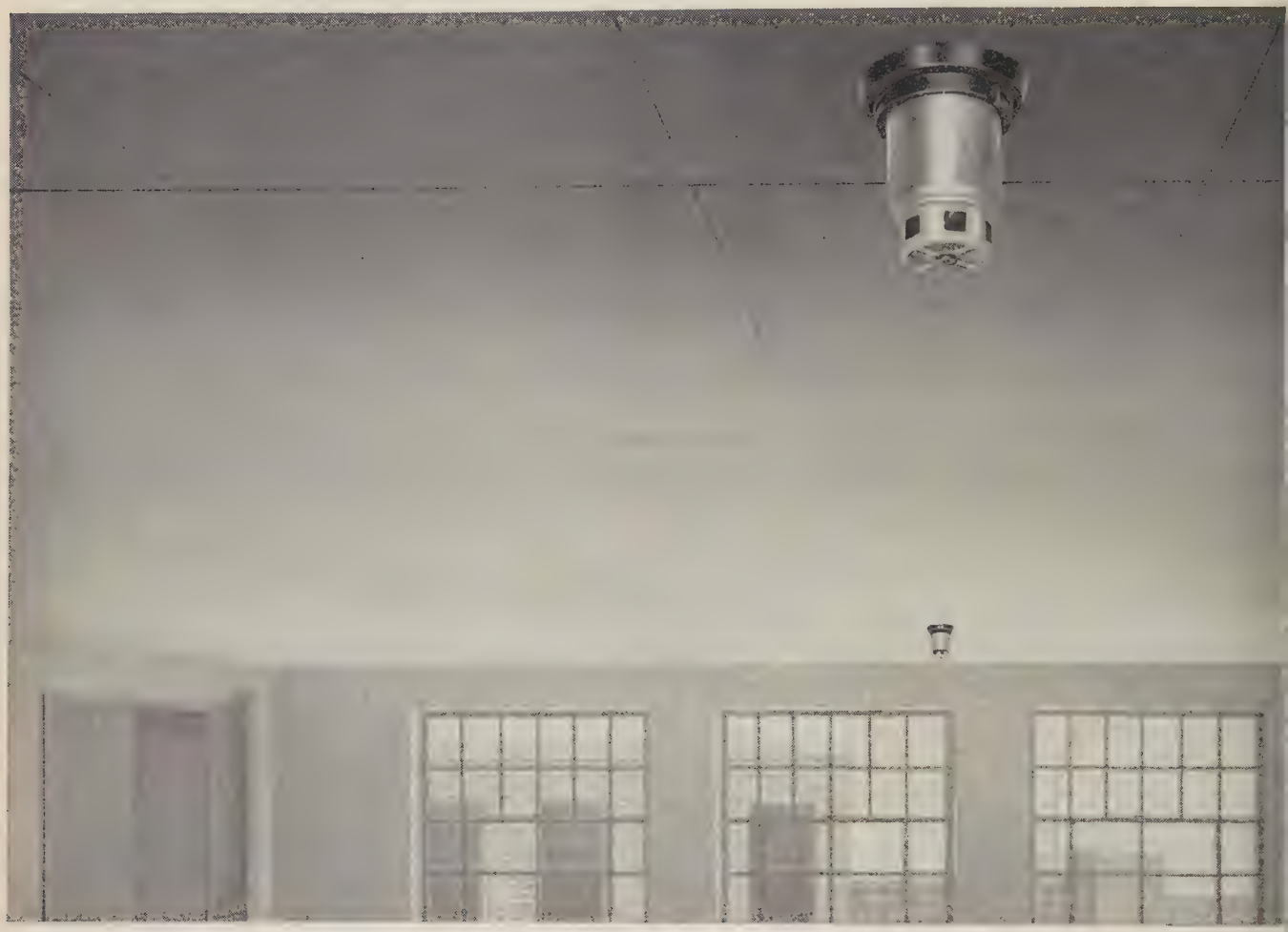
The first pamphlet, "A Safety Guide for Hotels," includes information on methods of inspection, accident reports and records, training of new employees, first aid, organization and functions of safety committees and common hazards to be avoided. Of particular value to hotel management are the suggested inspection report forms for checking physical conditions.

Among the subjects covered in "A Fire Prevention Guide for Hotels," are means of escape in the event of fire, alarm systems, first aid fire protection, building construction, boilers and power plants, fuel storage, chimneys and incinerators, electrical hazards, gas equipment, ventilation, air conditioning, refrigeration, decorations, service shops, storage of paints and solvents, storage rooms, kitchens, laundries and housekeeping.

Both pamphlets are available for ten cents a copy from the Accident Prevention Department, Association of Casualty and Surety Companies, 60 John Street, New York 38, New York. For orders of 100 copies or more, a special rate of $6.00 per hundred will apply.

New, radio-active, automatic fire guard!

C-O-TWO PRE-DETECTOR SYSTEM



Each pre-detector head protects up to 3,600 square feet of area... harmless radio-active element utilizing ionization chamber principle quickly detects all forms of fire... requires only simple two-wire circuit and insignificant wall space for controls.

This completely new and positive means of spotting fire is just what you've always needed and wanted . . . detects in the earliest stage, invisible combustion gases, visible smoke, slow smoldering, as well as open flame. The C-O-TWO Pre-Detector System is simple to install, extremely economical to maintain and doesn't depend on thick smoke or heat for actuation.

As many pre-detector heads as necessary can be connected together in a single circuit and up to 16 separate circuits or spaces handled by one system. With a single circuit the pre-detector heads are connected directly to the fire indicating cabinet, while with multiple circuits the pre-detector heads are first connected to one or more space indicating cabinets capable of visually showing by number the exact location of the fire. Relays perform such functions as sounding alarms, closing fire doors, shutting down ventilation and releasing fire extinguishing systems.

The C-O-TWO Pre-Detector System has been subjected to extensive testing and carries Underwriters' Laboratories, Inc. listing, as well as Factory Mutual Laboratories approval. Proven pilot installations have been made in such diversified properties as a television station, an electric power company network analyzer room, a railroad signal tower, an airline flight training equipment room and the offices of an insurance company.

Don't take unnecessary chances any longer . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts about this new C-O-TWO Pre-Detector System today!

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(For details, use Key # L-25 on card on page 73)

Water Spray

In recent years there has been a considerable increase in the use of finely divided water, discharged from spray nozzles or automatic sprinklers, for extinguishing certain types of fires. Since water in the form of small drops appears to be very effective on many fires, this development has become of increasing importance to both the fire services and fire insurance interests.

Recently, Underwriters' Laboratories, Inc., in a report prepared for the National Board of Fire Underwriters, describes the fundamental factors involved in fire extinguishment by means of water sprays. According to the study, tests show that fire extinguishment is due primarily to smothering effects of water vapor produced by evaporation of the water drops. Cooling effects of the water supply are also important.

The laboratory-scale tests were run to determine the droplet size distribution in experimental sprays and then to determine the extinguishing effects of water sprays of known droplet size.

Many successful applications of water spray in putting out fires had been reported previously, but data on the fundamental processes involved in extinguishment and the factors which influence them were somewhat meager. In order that this method of attacking fires may be employed most advantageously and its limitations understood, a knowledge of the way in which water droplets act to put out various fires is essential.

Fire Extinguishing Theory

It is generally recognized that fire is a chemical reaction proceeding with the evolution of heat and light. The most common unwanted fires involve reactions between a substance and the oxygen of the surrounding air. Two essential requirements for the initiation and maintenance of ordinary combustion are a fuel and an adequate supply of oxygen. The combustion processes will cease and the fire be extinguished if either reactant is no longer present in sufficient proportions.

The extinguishment of fire by removing the fuel is not always practical, although in some circumstances, such as closing a valve on a burning gas line, it may be the simplest method.

Curtailment or depletion of the oxygen supply is the basis of many fire fighting techniques commonly referred to as smothering or blanketing a fire. In order to put out a fire, elimination of all oxygen is generally not necessary; flaming combustion of most common materials can no longer continue after oxygen is reduced to 12 to 15 percent by volume.

Fires can be extinguished by diluting the oxygen content of the surrounding air with an inert gas or vapor. Carbon dioxide and nitrogen are commonly used for this purpose as are the various vaporizing extinguishing agents.

Similarly, it is well known that water vapor or steam may be used under appropriate conditions to dilute the oxygen in the atmosphere. In extinguishing fires by smothering, sprays of finely divided water as a source of water vapor have certain advantages.

In addition to fuel and oxygen, heat is necessary to start and maintain a fire. A combustible substance must be heated to its ignition temperature if combustion reactions are to proceed. Once started, the reaction is usually maintained by the heat liberated by combustion. If the seat of a fire can be cooled to temperatures below the ignition temperature, the fire will be extinguished. Sprays of water droplets apparently have certain advantages as a cooling medium for fire extinguishment.

Nineteen different spray nozzles or combinations of nozzles were tested on a variety of fires during the investigation. Fuels used included wood, gasoline, kerosene, and ethyl alcohol.

According to the NBFU report, sprays of finely divided water have an extinguishing effect primarily by diluting the air supply with vapor resulting from evaporation of water droplets in the heated area surrounding the fire. The cooling effects of the water may also be important factors in extinguishment in many cases. In order to obtain extinguishment, the water droplets comprising the spray must be relatively small, and the amount of water applied must be adequate in relation to the specific fire.

The marked increase in water surface per gallon where water is dispersed as droplets in a spray is an advantage since the rate of

Seasonal Fire Rise

Estimated fire losses in the United States during August amounted to $71,103,000, according to the National Board of Fire Underwriters, this loss represents a decrease of 9.0 percent from losses of $78,163,000 reported for August, 1954, and an increase of 15.4 percent over losses of $61,614,000 for last July (1955).

Losses for the first eight months of 1955 now total $602,474,000 a decrease of 0.2 percent from the first eight months of 1954, when they amounted to $603,685,000. These estimated losses include an allowance for uninsured and unreported losses.

evaporation of the water and the cooling effects are directly proportional to the surface area, other factors being constant.

There is a lower limit to the size of the droplets which are of practical use in fighting fire, however, since the droplets must be large enough to travel from the source of the spray to the heated area surrounding the fire, and to arrive there with sufficient energy to overcome the currents of hot and turbulent gases moving upwards and away from the fire.

Droplets too large to evaporate completely on passing through the zone of combustion and its immediate surroundings may contribute to extinguishment in some cases by cooling the unburned fuel. Even though no extinguishment occurs, the application of water spray may control the burning to some extent.

In tests where experimental water sprays having known droplet size distribution were applied to fires, extinguishment occurred if the droplet size was within certain limits and the total water reaching the test fire exceeded a minimum volume in relation to the drop size. The results of these tests suggest that the optimum average volume diameter of the water droplets for extinguishment is of the order of 300 microns (0.012 inch).

The tests also showed that kerosene and ethyl alcohol fires appear to be more readily extinguished by water spray than are gasoline fires.

In tests with water sprays applied to gasoline fires, it appeared that extinguishment was due primarily to dilution of the oxygen supply with water vapor. The absorption of heat during evaporation of the droplets may also contribute to extinguishment, particularly when it occurs in or near the zone of burning.

Extinguishment by cooling the fuel with water spray is not possible in the case of gasoline fires since the fire point and flash point of gasoline are well below the freezing point of water.

Copies of this report, "The Mechanism of Extinguishment of Fire by Finely Divided Water," may be obtained from the Research Division of the National Board of Fire Underwriters, 85 John Street, New York 38, N. Y.

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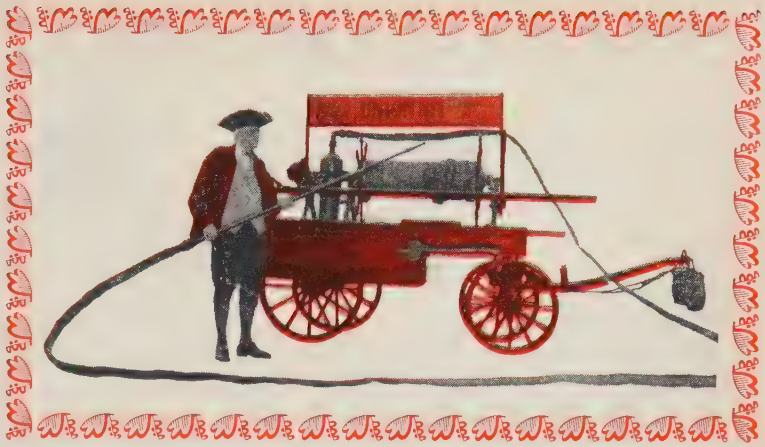
H. S. COVER, SOUTH BEND, IND.
"Respirators for Industry since 1894"

(For details, use Key # L-26 on card on page 73)

Truck Fire Protection

A revised fire safety standard applying to truck fire protection has been published by the National Fire Protection Association. Designated NFPA Fire Safety Standard No. 512, "Truck Fire Protection—Recommended Good Practices," it was officially adopted in revised form by the NFPA at its annual meeting. The principal revision applied to the installation of cargo space heating equipment. Section C of the standard now details a series of safeguards recommended to minimize the fire hazards of such installations. The standard is now available in pamphlet form from the NFPA, 60 Batterymarch St., Boston, and is also included in the 1955 edition of the National Fire Codes.



Historic fire truck, first used before Revolutionary War, is demonstrated by 94-year-old volunteer fire-fighter of the 90's.

New and Old Meet at Fire School

THREE HUNDRED and fifty New Jersey firemen—representing every county and every major community in the state—met last month at Sea Girt, for the New Jersey State Safety Council's annual Fire College.

Each year, the 3-day work-and-learn session gives the state's firemen an opportunity to test new equipment, and learn and practice the latest advances in skilled firefighting. A spirited pooling of "shoptalk" is also an essential part of the weekend, and fire and its prevention is the main topic of interest and conversation, from Friday arrival until Sunday departure.

Privately Supported

Since its 1947 inception, more than 15,700 New Jersey firefighters have attended sessions of the Fire College, which is an active division of the State Safety Council. The Fire College and all other activities of the Safety Council are totally sustained by contributions from New Jersey industry, commerce and finance. The Safety Council is a unique organization, and is the only privately supported and operated council in the United States. Its activities are not confined to firefighting alone, but include accident prevention in the home, school, church, farm, industrial plant and on the highway.

That the job has been well done and bettered each year is exemplified by the fact that each year the New Jersey death accident rate is lowered. In 1953, it was the nation's lowest, and last year the second lowest.

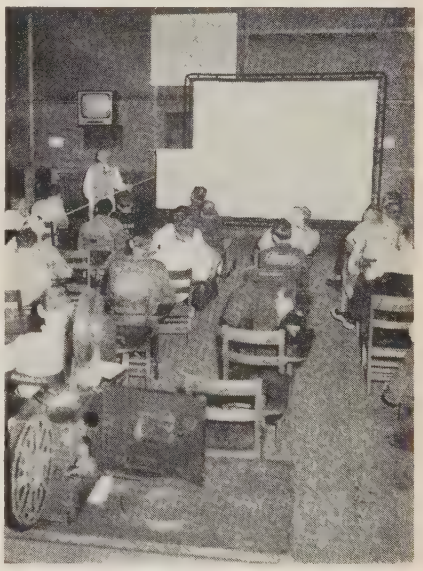
Courses Cover Wide Range

Firemen attending this year's Fire College participated in spectacular pit-fires, net rescues, burning houses, and heard a wide variety of lectures by fire authorities. Courses ranged from "flammable liquid fires" to "pump operation." The 350 fully-uniformed firemen and numbers of resplendent red engines and other pieces of equipment made a remarkable panorama.

Visiting the Fire College for the weekend was spry, 94-year-old Walter Godfrey of East Orange, New Jersey, who told fascinated younger firemen "how it was done in the old days." He has been a volunteer fireman since the turn of the century. The famed pre-Revolutionary firetruck from Crosswicks, New Jersey, was at the school, and provided an interesting contrast with the giant machines of today.

Pictures by courtesy of the New Jersey State Safety Council.

Man leaps into net held by "collegiate" firemen practicing fire rescue techniques.



Classroom instruction features visual aids and newest firefighting devices and ideas.

Some of the 350 firemen at the Fire College watch their classmates put out a fire.

Safe Maintenance for . . .

PORTABLE FIRE EXTINGUISHERS

Dry Chemical Cartridge-

Hand—Cartridge—Fyr-Fyter Co.

Hand—Cartridge—Pyrene C-O-Two

Hand—Cartridge—Ansul Chemical Co.

Hand—Cartridge—Walter Kidde & Co., Inc.

Hand—Cartridge—General Detroit Corp.
—General Pacific Corp.

Inspection and Maintenance

Extinguishers shall be examined at regular intervals not exceeding six months to determine if:

(a) Seal wires have been severed or the extinguishers otherwise tampered with.

(b) The orifice of the discharge nozzle is free of foreign material.

(c) The extinguisher shows evidence of mechanical damage or distortion to the shell.

Extinguishers shall be examined at least once a year to determine if:

(a) The weight of the carbon dioxide pressure cartridge meets the defined weight limits established by the manufacturer. If not, the cartridge shall be replaced or recharged.

(b) The carbon dioxide gas passages and dry chemical passages are clear. The manufacturer's instructions shall be followed.

(c) The dry chemical has free flowing qualities, and that the weight of the dry chemical in the extinguisher is neither above nor below the weight prescribed by the manufacturer.

(d) Nozzle and cartridge operating mechanism are free operating. Follow manufacturer's recommendations for inspection and maintenance.

(e) Hose and sealing gaskets have not been damaged. Extinguishers or parts which are not in good condition shall be replaced.

Extinguishers shall be recharged immediately after use.

Recharging

Carefully follow the manufacturer's directions on the instruction name plate.

Release the pressure after use. This action clears the hose of dry chemical as well as relieves the pressure.

Scope and Purpose

The scope and purpose of this safety code are intended to insure proper inspecting, recharging and maintaining of portable fire extinguishers.

and Type

Any dry chemical remaining in the shell after depressurization shall be inspected, after which the extinguisher shall be refilled to the rated capacity specified by the manufacturer. Only dry chemical furnished by the manufacturer shall be used for refilling.

Replace fully charged cartridge in accordance with the instructions furnished by the manufacturer.

Recharging work shall be done under capable supervision, and after installation of wire and lead seal, recharge date shall be recorded on a card which shall be attached to the extinguisher.

Stored Pressure Inspection and Maintenance

Extinguishers shall be examined at regular intervals not exceeding six months to determine if:

(a) Seal wires have been severed or the extinguishers otherwise tampered with.

(b) Pressure meets the prescribed limits.

(c) The orifice of the discharge nozzle is free of foreign material.

(d) The extinguisher shows evidence of mechanical damage or distortion.

(e) Extinguisher has the proper charge of dry chemical (this may be determined by weighing the extinguisher).

Extinguishers shall be recharged immediately after use.

Recharging

Carefully follow the manufacturer's instructions.

Release the pressure after use. This action clears the hose of dry chemical as well as relieves the pressure.

Only dry chemical furnished by the manufacturer shall be used for refilling.

Application

This safety code shall apply to all types of portable fire extinguishers.

Definitions

Where the word "shall" is used, that provision is intended to be mandatory.

Where the word "should" is used, that provision is intended to be advisory or recommended good practice.

✓ **Fire Protection Series**
next article in December

PART III This is the last of 3 installments of the *"Safety Code for Inspecting, Recharging and Maintaining Portable Fire Extinguishers"* prepared by and reprinted through the courtesy of the Fire Equipment Manufacturers' Association, Inc. The first two installments appeared in September and October.

At Right: Hand—Stored Pressure—American La-France Corp.

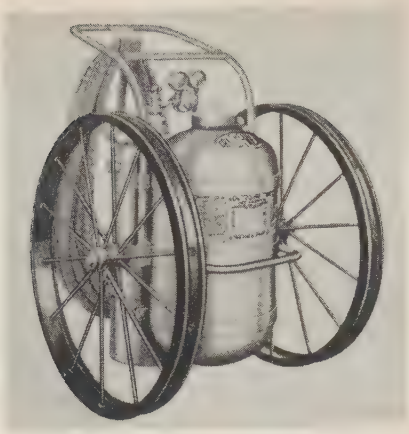
Below: Hand—Stored Pressure—Fyr-Fighter Co.

-Stored Pressure

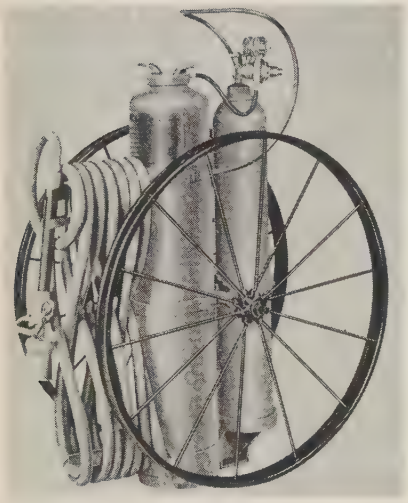
Hand—Stored Pressure—Walter Kidde & Co., Inc.

Hand—Stored Pressure—Stop-Fire, Inc.

Dry Chemical Type



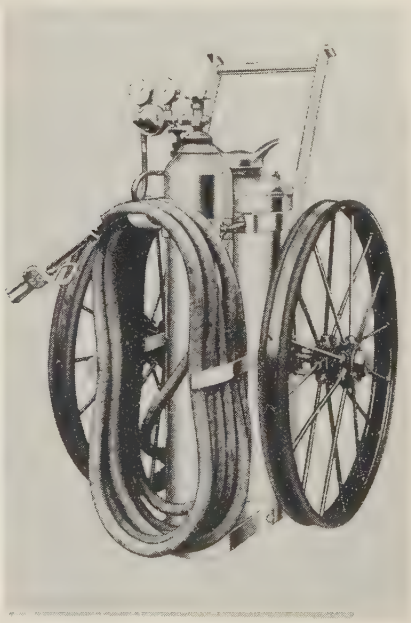
Wheeled Type—Pyrene C-O-Two



Wheeled Type—Walter Kidde & Co., Inc.

Wheeled Type—Ansul Chemical Co.

Wheeled Type—General Detroit Corp.—General Pacific Corp.



Wheeled Type—American La-France Corp.

Hand-Stored Pressure
(Continued)

Pressurize extinguisher as specified by the manufacturer.

Recharging work shall be done under capable supervision, and after installation of wire and lead seal, recharge date shall be recorded on a card which shall be attached to the extinguisher.

-Wheeled

Inspection and Maintenance

Extinguishers shall be examined at regular intervals to determine if:

(a) The wire and lead seals have been broken.

(b) The discharge nozzle is in the closed position and not blocked with foreign material.

(c) The extinguisher and hose are free of mechanical damage.

Extinguishers shall be examined annually to determine if:

(a) The nitrogen pressurizing cylinder is properly charged. This may be read directly on the valve gauge on some models or by following manufacturer's instructions on others.

(b) Hose is clear of dry chemical by following manufacturer's detailed instructions.

(c) The nozzle is free operating and undamaged.

(d) The hose coupling and nozzle connectors are tight.

(e) The extinguisher and hose are free of mechanical damage or corrosion.

Extinguishers shall be recharged immediately after use.

Recharging

Carefully follow the manufacturer's instructions.

Release the pressure in extinguisher.

Only dry chemical furnished by the manufacturer shall be used for refilling.

Recharge nitrogen cylinder if pressure is below recommended minimum.

Turn valves to proper position.

Recharging work shall be done under capable supervision, and after installation of wire and lead seal, recharge date shall be recorded on a card which shall be attached to the extinguisher.

Learning..... the hard way

LET'S GET TOGETHER . . .

A fire which caused more than 2 and a half million dollars damage could have been confined to a small area of a plant roof and ultimate damage would have been slight if . . . the automatic sprinklers had not been shut off for 10 minutes during the early stages of the fire!

The interior fire had apparently been extinguished by a couple of sprinklers. Unaware that employees on the roof had not stopped the fire in the insulated siding, the men inside the plant shut off the sprinkler valves. No one was instructed to stand by at the two shut sprinkler valves. The fire quickly rekindled inside the building, and in the absence of water, sprinklers fused progressively. About ten minutes elapsed before the valves were reopened. The Public Fire Department was notified 30 minutes after the fire began, but could not bring the renewed flames under control for four hours.

Coordination between fire fighters inside the building and on the roof was very poor. Apparently, the team had not been instructed how to keep in touch during the emergency of the fire. Management learned the hard way.

"PROSAIC" DEFINED . . .

According to the dictionary, the word "prosaic" means common place, dull, ordinary, etc. In accident terms it means the kind that happens all the time. It is the kind of accident that is most dangerous because, while it is deadly, it is often ignored.

For example, a workman using a portable drill was killed recently when he failed to attach a ground clip and received the full voltage through his hands from a short circuit in the drill housing. This is a common type of accident which nearly everyone understands but too infrequently takes the proper precautions to guard against.

The only unusual feature about this accident is that it occurred in a chemical plant where there were many special and unusual hazards, both mechanical and chemical. The "serious" dangers had all been avoided and experience in accidents had been particularly good until this workman failed to attach the ground clip to his portable tool. The commonplace or "prosaic" had struck again!

LAVA FLOW

Five men were working in a small room installing a floor covering material when, possibly because of the congestion of too many men in a small place, a five gallon can of mastic cement was overturned. That was the last thing any of the men remembered until they recovered consciousness in the hospital. Prompt rescue work by the plant safety engineer and first aid room attendants undoubtedly saved all the lives.

The room in which the men had been working was very poorly ventilated. They were using a solvent with a neoprene base. When the can overturned, the soup-like mastic spread over a large area greatly increasing its evaporating surface. The solvent was a flammable liquid and very toxic. Inhaling its vapors causes progressive depressant action upon the nervous system. It has a narcotic action, affects bone marrow and is a pronounced irritant to mucous surfaces.

The chief cause of this accident was overcrowding . . . trying to put five men with a can of dangerous solvent in a small, poorly ventilated room and expecting them to move around and work is inviting trouble. Employees exposed to high concentrations of solvents such as this one should wear respirators, chemical type goggles and protective clothing to avoid skin contact. Always the area should be adequately ventilated.

Use of Wetting Agents

Water has been accepted for many years as the most practical fire fighting agent because of its almost universal availability, its great heat absorption capacity and because it is a liquid.

Certain chemicals, known as "wetting agents" have been developed which, when added to plain water, result in breaking down the surface tension of the water thus making it a so-called "wetter" liquid, known as "wet water," which penetrates into absorbent objects or materials and spreads over a surface more readily than plain water.

The increasing use of wetting agents in fire fighting has become pronounced in recent years, and gives indication of becoming a permanent and important factor in the field of fire control, according to a revised bulletin issued by the National Board of Fire Underwriters. Experience has indicated that the addition of a wetting agent to plain water, when properly applied, will increase the extinguishing efficiency of that water with respect to quantity used as well as time saved. The value of such a factor may become of considerable importance, especially in rural areas where the amount of water available for fire fighting is often inadequate. In other cases, such as forest fires, the increased efficiency becomes an important consideration since most of the water must be transported manually in portable equipment.

The principal value of water in extinguishing a fire is its cooling effect. Cooling is obtained largely by absorbing heat from the burning material, and the major part of this takes place when the liquid is turned into steam or vapor. The mass of water that actually contacts the burning material is what really counts, and wetness usually increases this area of contact, and, consequently, the rate of heat transfer. Quantity of water and ability to deliver it to the seat of the fire are two main factors in combating any major fire.

The bulletin goes on to warn that the lowering of the surface tension of the water may result in a broken stream, even with a smooth bore nozzle. However, in general wet water can be effectively discharged and directed by most types of standard fire-fighting equipment originally designed for use with plain water. The degree of efficiency obtained will depend on utilizing the most efficient application methods, techniques and devices for the hazard involved.

Applications

For the small fire, or the fire which smolders and bores within a quantity of combustible material, or fires where outer charred layers of material may reduce the penetration of water, the use of wet water will prove advantageous. It is of much value in brush or grass fires, especially, where there is an accumulation of duff.

Wet water, especially in connection with spray or fog nozzles, may, under proper handling, materially reduce water damage; this applies particularly to an interior fire of such a character that it can be attacked with the relatively short reach available in fog streams. The greater penetrating (absorption) characteristic of wet water means less run-off onto floors and less damage to contents.

Certain types of fires, such as those in baled cotton, stacked hay, some rubber compounds and some flammable liquids, which do not ordinarily respond to treatment with plain water may be extinguished when a proper wetting agent is added to the water.

Wet water has the same limitations as plain water with respect to extinguishing fires involving chemicals which react with water to create new hazards and should not be used on fires involving such chemicals as sodium, calcium carbide, etc.

Class B fires: The use of wet water for the extinguishment of fires involving flammable liquids and greases is limited to those materials not soluble in water, such as petroleum products. On water soluble materials of the alcohol type, some control may be realized, but extinguishment is questionable.

Class C fires: Wet water solutions have the same limitations as plain water in fighting fires involving electrical equipment, so far as safety to fire fighting personnel is concerned. Application as a straight stream is not recommended, and may be dangerous to personnel. Spray or fog application can be employed with usual caution.

Wet water, due to its penetrating characteristics, may have harmful effects on electrical equipment involving use of fabric-covered wire in their assemblies, such as motors, transformers, etc. Electrical equipment of this nature should be thoroughly flushed and cleaned after exposure to wet water solutions and before placing in service again. Use on fires involving grouped electrical cables is not recommended.

A number of wetting agents are manufactured and available for use in fire-fighting. They are organic compounds, not all of the same formulation, and may require varying concentrations for use.

A Standard for Wetting Agents, N.F.P.A. No. 18, is published by the National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass. at 35 cents a copy.

Fire Literature

(Continued on page 66)

FOR SAFETY'S SAKE . . .

DAV-SON FLASHING SAFETY DIRECTOR

With Amazing Changeable Letter Slide Out Panel

Bright traffic light red, green spots flash "SAFETY FIRST." Color, motion, light bring eyes directly to message. Only DAV-SON has changeable letter design with removable panel for quick changes, peak attention. 98 red 3½" and 250 black 1⅞" acetate letters in compartment box incl. Size 18½x29x6. Complete with lamp and U.L. Cord. **$39.75**

Insist on genuine self-sealing cork back bulletin boards—hardwood frame. Sizes 12x18 and larger. With or without glass doors. **$4.15** up. Also with metal frames for inside or outside use.

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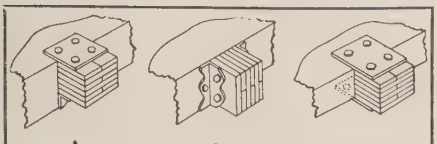
311 N. DESPLAINES STREET • CHICAGO 6, ILLINOIS

(For details, use Key # L-27 on card on page 73)

transportation safety



A B C

NEW TRUCK BUMPER

Rubber-coated fabric truck bumpers, capable of being mounted anywhere on a truck body to prevent damage to trucks, buildings or loads, are being manufactured by Bumpers, Inc. The new bumpers can reduce or eliminate truck maintenance and truck down-time due to body damage sustained in colliding with loading docks.

They act as a cushion taking the impact and absorbing it saving the truck body and keeping the load from being damaged. Truckers and warehousemen assert that much of the claims resulting from load damage are traceable to truck-dock impact rather than through actual transportation. Construction of the bumpers which are made with a new, specially developed rubber-coated fabric, allows for reversing the fabric so their life can be doubled. The truck bumpers are available in three designs. Style "A" is specifically designed for truck bed platforms and I.C.C. frames. Those designated as Style "B" is for truck bed platform corners, while Style "C" is used on I.C.C. frames.

For details, use Key # TS-20 on Inquiry Card on page 73.

S-D Day

Safe Driving Day has been announced for December 1 by the President's Committee for Traffic Safety. The objective of S-D Day, which includes an intensive ten-day advance and ten-day follow-up campaign, is to demonstrate that traffic accidents can be reduced materially when all drivers and pedestrians accept individual responsibility for accident prevention.

Through their active support, business and industry can help make the S-D Day campaign a success, cut absenteeism, and render a public service to the community.

Driver Education Awards

Ten states have been selected to receive top awards for the extent and quality of their driver education programs conducted during the 1954–55 school year. The selections were made by 12 educational and traffic safety leaders comprising the board of judges of the Eighth Annual National High School Driver Education Award Program.

After examining reports from all 48 states and the District of Columbia, the judges selected Minnesota and Massachusetts to receive top-ranking Awards of Excellence. Awards of Honor were earned by California, Delaware, New York, Oklahoma and Vermont, while three states, Arizona, New Jersey and Pennsylvania, qualified for Awards of Merit.

In addition, special Honorable Mention Awards were authorized for the states of Connecticut, Kansas, New Mexico and Ohio. The judges also instructed that Special Progress Awards be given to the public schools in Colorado, Mississippi, Montana and Washington and that Special Citations for Driver Education Attainment be given to the private and parochial schools in Delaware, New Hampshire, North Dakota, Oklahoma and Vermont.

Thomas N. Boate, manager of the Accident Prevention Department of the Association of Casualty and Surety Companies, which sponsors the officially authorized program, said that typical criteria used in evaluating the state programs were percentage of eligible students enrolled in driver courses, number of hours of behind-the-wheel practice driving and percentage of high schools in which driver education was taught.

Mr. Boate stated that, "after several years of leveling off, states this year reported a significant increase in their driver education programs. It is to be hoped that this indicates a trend toward further expansion of the nationwide program. During the 1954–55 school year 9,968, or 50 percent of the public high schools in the nation, offered driver education courses and enrolled 994,212 students, or 62 percent of the total potential enrollment."

Safety Patrols

In a move towards closer Army-Community cooperation in promoting highway traffic safety the First Army has established Motorized Safety Patrols at its three major installations of the eight-state First Army area, Lt. General Thomas W. Herren, First Army Commander, has announced.

Distinctively marked and painted light sedans, operated by military police, are to be assigned to Fort Dix, N. J., Fort Devens, Mass., and Camp Drum, N. Y. The Safety Patrol cars will have radio communication, highway warning kits, fire extinguishers and first aid equipment and electric warning blinkers. These patrols will be used in liaison and coordination with civil law enforcement and safety agencies.

They will not normally be used to apprehend traffic safety violators, but will be assigned to problem areas determined by each installation. They will be available for assistance and first aid in accidents occurring on their "beats" but their chief function will be to supervise Army motor vehicle traffic, and warn operators of such vehicles of unsafe driving practices.

Other features of the First Army's motor vehicle safety program include: intensive training and testing of all drivers of military

vehicles and constant check on condition of vehicles; use of dramatic visual displays on military installations, such as exhibits of badly wrecked vehicles to impress on drivers the need for safe driving; control of passes to military personnel with a view toward restricting distances traveled and late night driving; indoctrination of all personnel by means of posters, slogans, repeated reminders in post publications and at training sessions.

First Army's highway safety record for the first six months of 1955 shows a 50 percent decrease in traffic fatalities, a 29 percent decrease in traffic accidents, and a 6 percent decrease in injuries to military personnel involved in such accidents, as compared with the same period last year.

Driver Pre-Education

Riding herd on some 20,000 vehicles registered at Fort Benning is a complicated task, but officials have come up with a fast pony to help in the corraling. It is **advance driver education.**

The program operates much as traffic education systems used by major cities throughout the nation. At The Infantry Center, when a person, who owns a vehicle registered at the Provost Marshal's Section, is guilty of a traffic violation, he is designated to attend a 10-hour education course. Rank is of no question. At these classes, the driver receives instruction which is based on the theory that drivers owe definite responsibilities to society in problems concerning traffic safety.

Establishment of the program two years ago was an immediate step in the right direction, according to Norman M. Evans, Infantry Center safety director, whose office supplies the school with training literature and latest methods for furthering the effectiveness of the instruction.

Since inauguration of the school, approximately 2,500 students have graduated. This means they have completed 10 hours of training and instruction with a favorable passing mark of 70 or above. The course requires four two and one-half hour sessions to complete.

While at the school, attended on off-duty time, students get a lesson in good traffic sense. Training includes showing of safety films, reaction tests, a course in good sportsmanship while driving, and most important, a study in relationship between attitude and accidents. Research has turned up a theory that people drive as they live. The person who is well disciplined, courteous and thoughtful tends to be that kind of individual when he or she is driving.

The Fort Benning school, proceeding along this line, attempts to alter somewhat, unhealthy attitudes of men who obviously do not have the proper, and safe, mental approach to good driving habits.

How effective is the training? According to figures available, the school definitely has aided the safety program at Fort Benning.

Beginning in 1947, the first year records were maintained, the fatality rate was .64 per 1,000 persons or 1.29 persons per 1,000 vehicles. In 1954, although three times as many vehicles were registered, the fatality rate remained fairly constant at .66 deaths per 1,000 persons. The fatality rate per vehicle, however, dropped from the 1947 figure to 1.05 deaths for each 1,000 vehicles.

That the program has strengthened the over-all safety program at Fort Benning is undeniable. The program's instructors believe the value of the school will increase in the future because more and more drivers are voluntarily attending the course. To safety officials, this is the most favorable of signs.

"Generally when a person is involved in an accident," safety leaders emphasized, "driver education will help to prevent another by the same person. However, advance driver education could possibly prevent the original accident."

Safety Belt Progress

Impetus to the increasing use of automobile safety belts has been given by the declarations and announced plans of a variety of organizations. At least two major automobile manufacturers will make safety belts available as dealer-installed optional equipment in 1956.

The American College of Surgeons recently passed a resolution addressed to the auto makers stating that "competent studies make it appear that a large proportion of deaths and injuries could be avoided by the installation of passenger-stabilizing devices such as safety belts."

Added support for the use of safety belts has also come from a number of prominent safety organization. A bill pending in the U. S. Senate would require all new cars to be equipped with seat belts. The State of Illinois has passed a law providing that no car can be registered in that state after July 1, 1956, unless it is equipped for the installation of seat belts.

How Do You Look at an Accident?

These problems test your ability to judge accident responsibility based on modern defensive driving techniques. They have been devised by Donald S. Buck, safety director, U. S. Army Transportation Corps. Assume that each report is based on a true accident; that each driver's statement is true and complete as given. Decide in each case whether the driver caused the accident or was victim. Remember that you are not deciding who is at fault.

Case No. 11—Driver's Statement

"I was driving along on a highway, at 25 mph, in the outskirts of the city, when this child darted out in the street after a ball. I hit the brakes and stood on the horn, but the poor kid dived back right into the side of my car as I went by. The police released me, and blamed the child for the accident. You sure can't figure what a kid will do."

Case No. 12—Driver's Statement

"I'm driving along on a main street of the city, at 20 mph. Not much traffic. I am in the right lane, next to the parking lane. There is parallel parking along the curb. Suddenly this guy in a parked car opened his door just as I came along. I swerved and blew my horn, but the back of my vehicle hit his door and tore it off."

(Answers on page 78)

TRANSPORTING

SAFELY

THE widespread damage resulting from the explosion of munitions and similar cargo being transported by truck in recent years has caused the carriers of explosives to have the highest average property damage per accident of any special cargo group.

In one explosion involving an ammunition truck in a rural area of Nebraska the tremors were reported 20 miles away. The driver unhitched the cab of the truck after a trailer tire caught fire and drove to a safe location. When the truck blew up, a crater fifteen feet deep was blasted out of the road.

In another accident which occurred in West Virginia a fire in the fuel tank of a truck caused the explosion of 15 tons of dynamite being carried on the truck. The driver discovered the fire while the vehicle was in motion. He attempted unsuccessfully to warn all the nearby residents but the blast wrecked several homes within a radius of 500 feet and killed one occupant.

Rules and regulations to prevent accidents of these types have been established and are being enforced by the Interstate Commerce Commission, U. S. Coast Guard, and Department of Defense. There are also in effect many state and local laws which regulate the transportation of explosives. Much of this legislation is based on the Fire Prevention Code recommended by the National Board of Fire Underwriters. In general the regulations cover the following categories:

Drivers – physical examinations, maximum on-duty time, maximum driving time, instructions.
Equipment—brakes, steering mechanism, tires, horn, lights, windshield wiper, rear view mirror, coupling device, fire extinguishers.
Loading Practices.
Fueling Practices.
Railroad Crossings.
Emergency Signals.
Signs and Placards.
Inspection Reports.

Specific information concerning these items can be obtained from the references listed at the end of this article.

Check Tires

The possibility of fire in tires is remote if they are properly matched and inflated and if the driver checks them every 50 miles. Potential causes of tire fires include broken rim flanges, oil deposits on tires, rubbing of dual wheels when soft, bleeding of tires and excessive braking. Every tire which becomes flat or unusually hot or which starts smoking should be removed immediately. When a tire does catch fire, the unit should be stopped in a safe location and the fire attacked with short bursts from the extinguisher. Help in giving the warning should be obtained from other people as quickly as possible.

Watch for Reflash

It is necessary to remove the wheel with the burned tire as soon as the flames are controlled. The extinguisher should be kept available to fight any reflash of the fire. Fires have been known to reflash an hour after the flames were first extinguished. Sand, dirt or asbestos blankets can be used to smother the flames if the contents of the extinguisher are exhausted. Where it is available in quantity, water is always the best extinguishing agent for a tire fire.

Use Proper Gear

Similar instructions are applicable to brake drum fires. The maintenance of proper slack adjustment and wheel bearing adjustment and the use of proper gear to check speed of vehicles will prevent these fires from originating.

The following publications contain further information on the general subject of transportation of explosives and munitions:

1. "Interstate Commerce Commission Safety Regulations Revised," Parts 190 through 196, U. S. Govt. Printing Office, Washington 25, D. C.

2. "Transportation of Explosives and Other Dangerous Articles by Motor Vehicle"—Part 197 Interstate Commerce Commission Safety Regulations, U. S. Govt. Printing Office, Washington 25, D. C.

3. Dangerous Articles Tariff No. 9 Interstate Commerce Commission Regulation, Issued by H. A. Campbell, Agent, 30 Vesey Street, N. Y. 7, N. Y.

4. Fire Prevention Code, recommended by the National Board of Fire Underwriters, 85 John Street, New York 38, N. Y.

5. "Rules, Regulations, General Information for the Safe Transportation of Munitions," Munitions Carriers Conference, 1424 Sixteenth St., N.W., Washington 6, D. C.

6. "Rules for the Safe-Efficient Driving of a Motor Vehicle Transporting Munitions," Munitions Carriers Conference, 1424 Sixteenth St., N.W., Washington 6, D. C.

7. "Safety in the Handling and Use of Explosives," Institute of Makers of Explosives, 250 East 43rd Street, N. Y. 17, N. Y.

YOU CAN'T FALL
It's a Life Saver

It locks automatically—
instantly—holds

SAFETY DEVICE FOR LADDERS

Prevents death and injuries from falling.

Inexpensive. Easy to install. Clamps to any rung ladders, peg ladders, pole or frame. No welding or cutting.

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Simple to operate. No upkeep. Requires no attention from climber.

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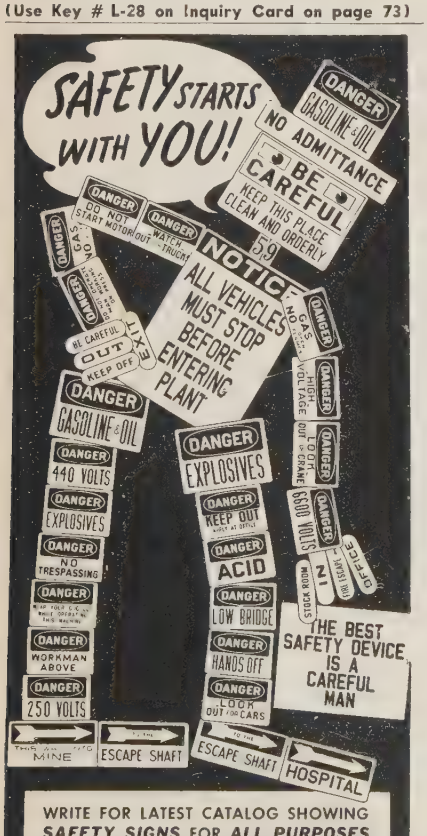
(Use Key # L-28 on Inquiry Card on page 73)


SAFETY STARTS WITH YOU!
DANGER
GASOLINE-OIL
NO ADMITTANCE
BE CAREFUL
KEEP THIS PLACE CLEAN AND ORDERLY
DANGER
DO NOT START MOTOR
DANGER
WATCH OUT FOR TRUCK
NOTICE
ALL VEHICLES MUST STOP BEFORE ENTERING PLANT
DANGER
DANGER
DANGER

sion on critical equipment, failure of pump packings, etc.

(6) Fires caused by operational errors due to inadequately trained personnel or lack of understanding of the hazard potential of the materials involved. Examples: shutting off relief valves from pressure systems, accidental polymerization of plastics in the emergency relief equipment, etc.

(7) Rapid and uncontrolled spread of fire in a plant due to improper fire protection facilities, lack of trained fire fighting personnel, and poor plant layout. Examples: lack of water supply, spray and sprinkler systems, foams, inert gases, plant brigades, fire equipment; topographic considerations, segregation of hazardous operations, etc.

(8) General increase of fire hazards due to poor housekeeping and unsafe waste disposal practices. Examples: failure to plan disposal of still residues, contaminated filtering media, flammable liquid spillage, etc.

Production & Fabrication

The principal fire and explosion problems which should receive consideration in the production and fabrication of plastics are as follows:

(1) Hazards of flammable liquids used in the preparation of plastic materials and in the operation of plastic forming equipment. Examples: preparation of coating materials, solvent removal in film casting, lubricants for equipment, coating finished products, hydraulic fluids.

(2) Dust explosion hazards involving molding powders and dust residues in machining operations. Examples: use of fine plastics molding powders during processing, flash and fin removal after molding and casting operations, machining, polishing, etc.

(3) Handling and storage of hazardous chemicals. Examples: (organic peroxides) benzoyl peroxide, tertiary butyl peracetate, etc.

(4) Sources of ignition in high hazard areas. Examples: static electricity in film casting, heating devices in drying ovens, overheated bearings in process equipment, open flames from welding maintenance work, etc.

(5) Lack of safety controls on process equipment. Examples: excessive pressure and temperature

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(For details use Key # L-30 on Inquiry Card on page 73)

(For details, use Key # L-31 on card on page 73)

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UP FAST— UP TO LAST
BRADY
Self-Sticking
Accident Prevention Signs

Unskilled help puts them up quickly—without nails, screws, or tools. Stick and stay stuck to any surface.

Wordings, colors, sizes, are recommended and approved by ASA and NSC.

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749 W. GLENDALE AVE • MILWAUKEE 12, WIS.

(Use Key # L-33 on Inquiry Card on page 73)

indicators and warning devices, pressure relief devices, explosion diaphragms, etc.

(6) Fires caused by ineffectual supervision and poor training of operating personnel. Examples: careless handling of portable electrical equipment, removal of safety controls to increase production, etc.

(7) Increased fire hazard through the lack of planned fire protection. Examples: location of hazardous processes, type of water supply, use of sprinklers, inert gas, watchman service, plant brigade, etc.

(8) Fire hazards caused by poor housekeeping, inspections and maintenance. Examples: removal of dusts from operating areas, scrap disposal, lubrication of equipment, oil leaks, etc.

An examination of the physical and chemical properties of plastic materials reveals that most of them were not intended for high temperature application or exposure to fire conditions. Like most organic compounds, synthetic resins will burn under certain conditions. While there is no special fire hazard in the generally accepted usage of plastics, a frequent re-evaluation is necessary in order to adjust to the changes in materials and to their utilization in new fields.

In fires every conceivable condition is possible ranging from complete to partial combustion or smoldering and destructive distillation. Hence, it can be readily appreciated that the wide variety of plastics and their constituent modifying agents can bring about an extensive series of toxic and nonrespirable by-products of varying concentration.

Buildings used for the manufacture of molding materials, sheet plastics, laminated products or the production and assembly of plastic items should be constructed in conformance with the National Building Code. Particular consideration should be given to the use of fire resistive construction or noncombustible construction protected by automatic sprinklers. Vertical openings for elevator shafts, stairways, and material chutes should be protected to avoid the rapid spread of fire. Fire walls should be used to limit the size of excessively large floor areas. Explosion venting should be provided in rooms where explosion hazards exist.

Process units should be in locations that make them accessible to fire control operations. One guiding principle is the prevention of fire spread through exposure by adequately separating process equipment, storage areas, and other facilities. Those operations which are considered particularly dangerous should be segregated.

In conclusion, the report emphasizes that fire safety in plastics manufacturing plants depends on a well developed program for inspection, maintenance and good housekeeping. A thorough inspection service in a plant conducted by members of the engineering and safety departments will generally increase the efficiency of production in addition to providing a better record with regard to fires and explosion. Inspections should establish that equipment is suitable for the intended operation and will not fail unexpectedly. By keeping a constant check on wear and corrosion rates of equipment, it is possible to anticipate replacements or repairs, and guide preventive-maintenance operations. The types of equipment that require periodic inspection and maintenance are:

1. Process Equipment, such as, furnaces, heat exchangers, piping, pumps, compressors, motors, polymerizers, autoclaves, stills, instruments, pressure relief valves, and flash-back arrestors.

2. Utility Equipment, such as, main boilers and heat producing units, electric generators, water supply, storage and distribution systems, steam and compressed air distribution systems, etc.

3. Tanks and Auxiliary Equipment, such as, various types of storage tanks, connecting piping, gauges and measuring instruments, dikes, drains, vacuum and pressure relief devices, flame arrestors, breathing and emergency relief equipment, etc.

4. Plant Buildings, Transportation, Shipping and Storage Areas, and Equipment, such as, tank cars, transfer pumps, etc.

5. Fire Protection Equipment, such as, water storage, piping and pumping facilities (for fire use), permanent installations of foam, fog, spray, gas, or dry powder extinguishing systems, first aid fire extinguishers, fire trucks and pumpers, alarm systems, etc.

inside the trade

STOP-FIRE, INC. has announced details of a new plant and home office, now under construction in South Brunswick, New Jersey. The company expects to occupy its new quarters in early 1956. The new plant, which will provide greatly expanded facilities for production and warehousing of its fire extinguishers, is the first unit of a proposed "Fire Fighting Center" that will cover 100 acres. The property is located on U. S. Route No. 1 at Black Horse Lane, seven miles south of New Brunswick, N. J. Future plans call for other major units: a modern research laboratory, elaborate testing grounds, and eventually a training school.

AMERICAN STANDARDS ASSOCIATION, INC. has announced the election of J. L. Cranwell, vice president of the Pennsylvania Railroad Company, New York, as president of the association.

Mr. Cranwell will fill the post left vacant by the death of Edward T. Gushée, vice president of the Detriot Edison Company. Mr. Cranwell became a member of the Board of Directors of the American Standards Association, representing the Association of American Railroads, in January 1953. He was elected vice president of the Association on January 1, 1955.

THE YALE & TOWNE MANUFACTURING COMPANY has been granted Factory Mutual approval for its full line of LP-Gas powered industrial lift trucks. The company had previously been granted approval by Underwriters' Laboratories. The approvals cover both permanently mounted ASME containers and detachable ICC containers.

A-P CONTROLS CORPORATION, Milwaukee Wisconsin manufacturers of refrigeration and heating controls announces the appointment of *Arthur W. Krause* as chief methods engineer. Mr. Krause will replace Mr. Ed Solski who has been promoted to the position of chief industrial engineer.

ROBERT PERRY TYLER, Vice President in Charge of Sales of *MACWHYTE COMPANY*, died at his home October 2, 1955, in Kenosha, Wisconsin. He was born at Roanoke, Virginia, October 7, 1897, and was widely known throughout the wire rope industry. Mr. Tyler joined Macwhyte Company in 1945 as General Sales Manager, was elected a director in 1946, and appointed Vice President in Charge of Sales in 1947. Prior to his association with Macwhyte Company, he was employed by John A. Roebling's Sons Company of Trenton, New Jersey, and A. Leschen & Sons Rope Company of St. Louis, Missouri, as General Sales Manager.

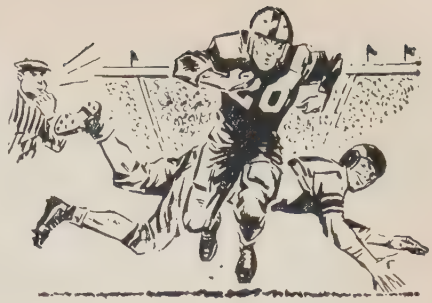
ANSUL CHEMICAL CO. has announced a three-point capital expansion program consisting of an addition to the company's mechanical manufacturing facilities in the fire equipment division, and new chemical plant buildings for the manufacture of sodium bisulfate and niacin. The proposed $100,000 addition will enlarge the fire equipment production area by about 12,000 square feet. The space will be used for the fabrication of larger equipment.

PORTOMAG SALES INC. has been formed to handle both national and foreign sales and service of Portomag units, the new portable magnetic drill press manufactured by Lupear's Tool and Die Co. of Farmington, Michigan. Headed by *R. S. Ebbert* and *R. R. McLeese*, the new organization will be located at 1511 E. Nine Mile Road, Ferndale 20, Michigan. Branch sales and service offices will be located in principal industrial areas throughout the country.

WYANDOTTE CHEMICALS CORP. has recently promoted *Stanley Johns* to District Sales Manager of the J. B. Ford Division St. Louis office. He will supervise a sales force covering Missouri, Arkansas, Western Tennessee and Southern Illinois, servicing all industries which use commercial cleaners, germicides, and floor absorbents.

The company has also announced the opening of enlarged technical service laboratories for the J. B. Ford Division, both in Wyandotte, Michigan and in Los Nietos, California—near Los Angeles. These enlarged headquarters facilities enable the more than 200 Wyandotte Chemicals resident representatives to give faster "trouble shooting" service.

PARKER SWEEPER CO., of Springfield, Ohio, has appointed *BRINKER SUPPLY COMPANY*, (6545 Hamilton



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Penalty for

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Street_____

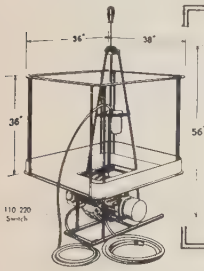
City_____ Zone____ State_____

Use Key # L-34 on Inquiry Card on page 7

ALBINA CLIMBER

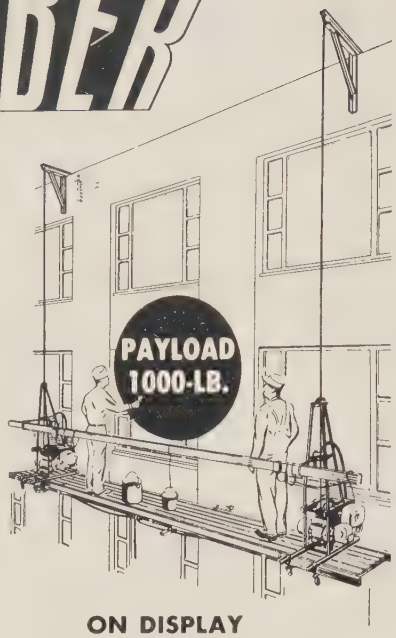
SHOW MORE PROFITS USING A "CLIMBER"

Models are lightweight — electric 175 lbs., air 160 lbs. Powered by ¾ H.P. General Electric motor. Speed 20 ft. per minute. 150 ft. of 5/16" cable. Operated on 110 or 220 volts.



Baskets are interchangeable with electric or air power.

PAYLOAD 500 lbs.



ON DISPLAY
7th Plant Maintenance Show
January 23-26
Convention Hall—Philadelphia
Booth 1556

ALBINA ENGINE & MACHINE WKS

2100 N. ALBINA AVENUE • PORTLAND 12, OREGON

(For details, use Key # L-35 on card on page 73)

"Fire-Chief Finished"

WELDING CURTAINS—SALVAGE COVERS

to confine the welding operation to a given area

used to protect machinery, and other equipment from water, dust and snow.

MADE OF CANVAS

impregnated with Hooper's Fire Chief treatment under their patent which carries the Underwriters' Laboratory seal.

A. Smith & Son Inc.

Established Eighteen Hundred Sixty-Seven

MANUFACTURERS OF REEVES STRETCHER

Ridge Ave. at Green **Philadelphia 23**

"If It's Made of Canvas, We Make It"

(For details, use Key # L-36 on card on page 73)

Avenue) Pittsburgh, Pa., as a sales and service distributor for its maintenance products in western Pennsylvania and part of West Virginia.

THE PIONEER RUBBER CO., of Willard, Ohio, has announced the formation of a Hand Protection Clinic to help industrial concerns solve problems relating to employee hand protection. The service is free and any firm can write a description of its hand protection problems to the clinic, where the facts will be analyzed and recommendations made for the right glove for the particular job involved.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, Etc., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, OF SAFETY MAINTENANCE AND PRODUCTION, published monthly at Rensselaer, N. Y., for October 1, 1955.

State of New York, County of New York, ss. Before me, a Notary Public in and for the State and County aforesaid, personally appeared Arthur Snyder, who, having been duly sworn according to law, deposes and says that he is the business manager of SAFETY MAINTENANCE AND PRODUCTION, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management and circulation of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in Section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editors and business manager, respectively, are: Publisher, Alfred M. Best Company, Inc., Executive Offices, 75 Fulton Street, New York, N. Y.; Editor-in-Chief, Alfred M. Best; Managing Editor, C. M. Kellogg; Editor, Harry Armand; Business Manager, Arthur Snyder: all of 75 Fulton Street, New York, N. Y.

2. That the owner is Alfred M. Best Company, Inc., 75 Fulton Street, New York, N. Y.; and that the owners of 1% or more of the stock are: Mrs. Annie V. Ammermuller, 235 West 102nd Street, New York, N. Y.; Mildred B. Baird, 86 Prospect Avenue, Montclair, N. J.; Alfred M. Best, 75 Fulton Street, New York, N. Y.; Randolph C. Betts, Montreal, Canada; Clem and Company, Boston, Mass.; Crum and Forster, 110 William Street, New York, N. Y.; Flitcraft, Inc., 75 Fulton Street, New York, N. Y.; Kellogg and Company, Westfield, N. J.; Alice L. Kellogg, 615 Tremont Avenue, Westfield, N. J.; Chester M. Kellogg, 615 Tremont Avenue, Westfield, N. J.; Frank J. and Eleanor Matre, 10 South LaSalle Street, Chicago, Ill.; Estate of John McElraevy, 75 Fulton Street, New York, N. Y.; Raymond T. Smith, 10 South LaSalle Street, Chicago, Ill.; Vance C. Smith, 20 No. Wacker Drive, Chicago, Ill.; Arthur Snyder, 75 Fulton Street, New York, N. Y.; Mrs. Kathryn Snyder, 83 Eton Road, Garden City, N. Y.; William E. Whitney, 139 Clifton Street, Belmont, Mass.

3. That the known bondholders, mortgagees and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages or other securities are: None.

4. That the two paragraphs next above giving the names of the owners, stockholders and securities holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company, but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees hold stock and securities in a capacity other than that of a bona fide ownership; and this affiant has no reason to believe that any other person, association or corporation has any interest, direct or indirect in the said stock, bonds or other securities than as so stated by him.

ARTHUR SNYDER.
Business Manager.

Sworn to and subscribed before me this 13th day of September, 1955.

ELIZABETH BRENNER
Notary Public, State of New York
No. 24-0407700
Qualified in Kings County
Cert. filed N. Y. County Clerk
Commission Expires March 30, 1957

Material appearing in this section is published as information for our readers and is not intended to imply endorsement or guarantee by SAFETY MAINTENANCE.

What's New . . .

For your convenience in obtaining descriptive literature of products listed here, use the Reader's Inquiry Card. Just write in the code number given with each item. Or send written requests to:

Service Dept.,
SAFETY MAINTENANCE

SAFETY EYEWEAR FRAME

(Use Key # 651 on Inquiry Card on page 73)

A RUGGED new safety eyewear frame for use by men or women workers has been developed by Bausch & Lomb Optical Co. Known as the "Titan", it is claimed to be the first combination metal-and-plastic industrial safety frame. It combines the strength of metal with the adaptability of plastic. Safety features include: a frame of nonflammable acetate butyrate, extra tough to withstand breakage, and fully cured to hold its shape; a metal bridge, plated to resist corrosion, and held to the frame with four rivets for maximum strength; adjustable nose pads which are an integral part of the bridge. Rigid pads are also available.

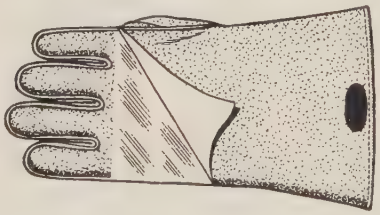
The new frame features safety-cross plaques on the front temple corners which identifies them instantly as safety glasses with safety lenses. The "Titan" has a large, modern lens shape which is attractive and functional. It provides a broader horizontal field of vision and offers a better location for bifocal segments.

According to Bausch & Lomb officials, the new frame answers the demand by safety people for equipment which is attractive to workers as well as sturdy and utilitarian. They have modern ophthalmic styling, and come in a warm-toned neutral gray shade.

COLD DEGREASING SOLVENT

(Use Key # 652 on Inquiry Card on page 73)

A SOLVENT for cleaning metals contaminated with greases, oils, tars and waxes has been developed by The Dow Chemical Co. for cold-cleaning, dip-cleaning and bucket-cleaning operations. Called "Chloroethane," it is an inhibited grade of 1,1,1-Trichloroethane. While its solvent properties closely parallel those of carbon tetrachloride, Chloroethane is one of the least toxic of the chlorinated solvents, but, like them, has comparatively low flammability. While the solvent is not recommended for vapor degreasing, it is suitable for cold cleaning of all types of metals, including aluminum under ordinary conditions.



INSULATING WELDER'S GLOVE

(Use Key # 653 on Inquiry Card on page 73)

FOR WELDING, burning, furnace and other high temperature jobs where burn hazards and acute discomfort can result from radiant heat, a new type of heat-insulating glove has been developed by the Olympic Glove Co. Known as the "Al-Cool", the new glove utilizes an interlining of aluminum foil to shield the back of the hand. The bright metal foil is said to reflect as much as 95 percent of the radiant heat back toward the source. The foil interliner covers the entire back of the hand from wrist to knuckles.

This new type of glove is immediately available in three styles of welders gloves. Samples are available. Special designs, including aluminum foil interlining for palm protection, can be made to order.

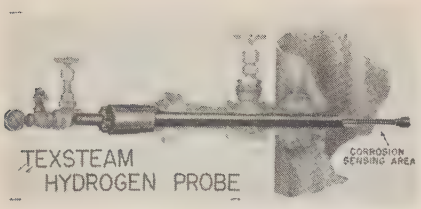
WIDE VISION FACE MASK

(Use Key # 654 on Inquiry Card on page 73)

THE "SCOTTORAMIC" face mask manufactured by Scott Aviation, offers unusual visibility over former type masks. Said to be an entirely new concept in design, the new mask incorporates the "wrap-around windshield" idea and does away with the two separate eye-pieces.

The mask has been thoroughly tested in action and is endorsed by leading fire-fighting, industrial safety, and airline officials. In addition to unlimited visibility, the mask dispels all feeling of claustrophobia. Non-fogging is assured by the circular air-washing action of the cool air or oxygen supply. The plastic safety lens is virtually unbreakable.

Because of greatly increased side and forward vision, industrial employees can work longer with less fatigue, fire fighters perform emergency and rescue operations with greater safety and confidence, aviators are able to wear the mask even while landing aircraft, according to the manufacturer. A double lip seal makes the mask comfortable when worn for a long time . . . even over glasses. It may be donned with one hand, leaving the other free for use in emergency situations. Microphone and air hose are optional equipment.



TANK CORROSION DETECTOR

(Use Key # 655 on Inquiry Card on page 73)

A WARNING safety device for the oil refining and chemical processing industries has been developed by Texsteam Corp. Their Hydrogen Probe gives a warning indication on a pressure gauge that dangerous hydrogen blisters are corroding the walls of metal tanks in which chemical reaction is in process under pressure.

The device is made of seamless carbon steel tubing. One end is closed and machined to make a thinner walled section which acts as the corrosive-sensing-area. This end is inserted into the chemical processing tank, the other end extending outside the tank is held in position with fittings and pressure tight packing.

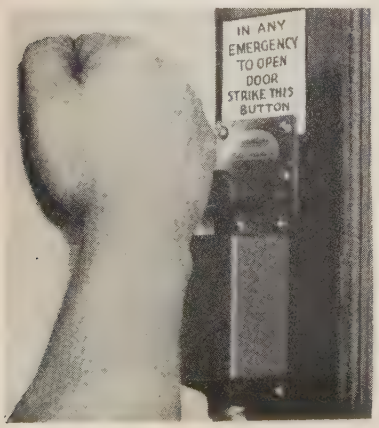
If inside the tank there is the right combination of hydrogen-ions, sulfides, temperature and/or acidic compounds that can penetrate steel and form hydrogen blisters, these blisters will be formed inside the thinner walled section of the Hydrogen Probe before excessive damage is done to the wall of the tank. The hydrogen from the blister will show its presence on the pressure gauge on the probe outside the tank.

The probes are removed and inspected or replaced from pressure processing tanks without taking the tank out of production or off the stream. They are made 18", 24" or 36" long for different size processing tanks and are available in three different types of mountings—flanged, threaded or pressure lubricated.

INSIDE LOCK RELEASE

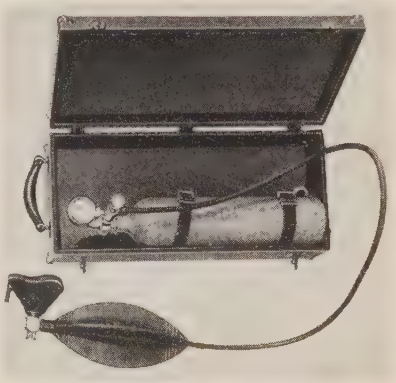
(Use Key # 656 on Inquiry Card on page 73)

IN LARGE PLANTS, office buildings, or public structures there is an ever-present danger of some employee or tardy visitor being locked inside at the close of the day. A new device, just introduced by American Allsafe Co. of Buffalo, N. Y., claims to prevent this. It is attached as an extra to their standard Emergency Lock Release, which serves a similar function on the outside of the door.



The new Inside Lock Release is attached inside the door, gate or window and a prominent red label bears the inscription—"In an emergency, to open door, strike this button." When the button is hit, it breaks a control glass on the outside of the door (or gate). This automatically releases a pin which holds the hasp padlock in place. The door can then be pushed open. The device may be quickly reset by inserting another special glass panel in the Lock Release. To prevent unauthorized use, the release may be attached to a closed circuit electric alarm system and activate a siren, bell or warning light, either at the same location or a distant location, such as the desk of the plant guard or watchman.

Quickly and easily installed, it is fully guaranteed by the manufacturers. Another use is for plants that keep windows permanently closed because of air conditioning systems. By attaching this device to the windows, they may be padlocked on the outside, yet instantly opened from the inside in case of fire or other emergencies.



RESUSCITATOR-INHALATOR

(Use Key # 657 on Inquiry Card on page 73)

A NEW PORTABLE oxygen unit designed for the emergency administration of oxygen for resuscitation or continuous flow therapy is being manufactured by the Ohio Chemical & Surgical Equipment Co. It is recommended for emergency use by physicians, in dental offices, in hospitals, by ambulance services, police and fire departments, civil defense units, in industrial plants, power companies and mines.

The unit consists of the carrying case, yoke for medical-type cylinder valves, needle valve control with pressure indicating gauge, supply tubing, collector bag, inhaler assembly modified to limit positive pressure to approximately 20 MM. Hg., face mask, and cylinder wrench.

When used for resuscitation the needle valve is opened wide to permit the bag to fill while the mask is held in position on the patient's face. Pressure is then applied to the bag by squeezing to force the oxygen into the patient's lungs. For continuous flow therapy administration the flow of oxygen is limited to the amount necessary to keep the bag slightly distended through the inhalation phase of the patient's respiration.

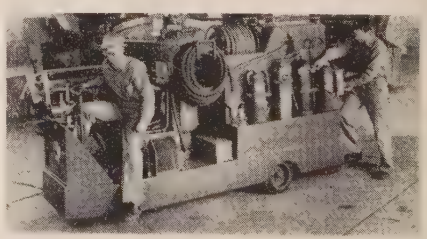
20,000-VOLT HATS

(Use Key # 658 on Inquiry Card on page 73)

A SAFETY HAT for high voltage areas is being marketed by General Textile Mills, Inc. Made of a special plastic, the Gentex Safety Hat is said to have a dielectric resistance of over 20,000 volts and exceeds all Federal and E. E. I. specifications. There are no holes, bolts, rivets or metal parts to conduct either electricity or heat. The hat also meets penetration test, drop test and flammability test requirements to assure positive head protection from falling or moving objects as well as electricity.

The hat is designed for wearer comfort: headband is shaped to fit the contours of the head and is adjustable in size; space between head and shell provides cool ventilation and protection against impact blows; the nylon and plastic sling assembly snaps in and out and is washable; total weight is 15 ounces. Available in several permanently impregnated colors and in two models: hat with full brim, or cap with front brim.

In addition to the hard hats for high voltage areas, the company is also offering general purpose hard hats for construction, steel, lumber, oil and other industries. They protect the head from falling and moving objects, insulate against heat and sun, and have dielectric resistance of over 10,000 volts.



IN-PLANT FIRE TRUCKS

(Use Key # 659 on Inquiry Card on page 73)

INTRODUCTION of a complete line of easily maneuverable In-Plant Fire Trucks has been announced by the Ansul Chemical Company. Designed to carry a wide assortment of fire fighting equipment and especially adaptable to the needs of plant fire brigades, the trucks are being manufactured by St. Clair Industries and will be

(Continued on page 75)

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

DUST & FUME CONTROL

Five Basic Dust Problems 413
American Air Filter Co., Inc. Well illustrated and informative bulletin shows various types of dust collectors designed for the five basic types of dust problem: moderate dry, granular; medium loadings of fine; heavy loadings of all sizes; high loadings of dry granular; extremely fine dry particles.

Hazardous Gas Detector 414
Taller & Cooper, Inc. An unusually versatile gas detector is described in this 4-page bulletin. The unit can detect low concentrations of toxic or combustible gases, such as benzene, toluene, gasoline, alcohols, carbon monoxide, acrolein, hydrogen sulfide, saturated hydrocarbons, etc.

Fume Control System 415
Martin Equipment Co. This 4-page illustrated bulletin describes a mobile dust & fume collecting system for metal foundry and pouring operations. Collecting hood is suspended from overhead pouring ladle carriage.

LIGHTING & ELECTRICAL

Emergency Lights 416
Electric Storage Battery Co. This 8-page catalog describes a full line of U.L. approved battery-powered emergency lights of the permanent connection, auxiliary plug-in and battery-only types. Contains diagrams, charts & specifications useful to safety engineers, architects, builders, purchasing agents, etc.

Enclosed Switches 417
Micro Switch. A new 28-page catalog covers a complete line of industrial enclosed switches, for a.c. or d.c. applications. Includes general purpose, sealed, heavy-duty limit, hand-operated and contact types available in various designs and ratings.

Electric Tools 418
Porter-Cable Machine Co. Portable electric tools and kits for builders, carpenters, plumbers, electricians and maintenance crews are described and illustrated in this 25-page catalog. Includes saws, sanders, drills, planes, routers, shapers, grinders, grass trimmers, etc.

25 Lighting Solutions 419
Graybar Electric Co., Inc. The solutions to 25 industrial lighting problems are described and unusually well illustrated in this formative 28-page brochure. These case histories cover a wide range of lighting needs and include data on type, size and spacing of lighting units.

Grounded Lamp Guards 420
McGill Mfg. Co. Illustrated bulletin describes a line of grounded portable extension lights. Units consist of metal cages grounded internally in the molded phenolic handles which may also have a 3-plug convenience outlet for grounding drills or other tools

Battery Searchlight 421
Justrite Mfg. Co. Small, portable searchlights that operate on self-contained dry batteries are described in this bulletin. Suitable for emergency use, models include 12-volt and 6-volt types.

Electric Cable Vulcanizers 422
Joy Mfg. Co. This 16-page catalog describes, illustrates and gives full specifications for various kinds of electric cable vulcanizers. In addition to portable, kit box, and steam heated types, the catalog gives data on vulcanizing supplies and information on how to use the products.

PERSONAL PROTECTION

Hard Hat Winter Liners 423
E. D. Bullard Co. Five types of winter liners for safety hats and caps are illustrated in this bulletin. They provide comfort to outdoor workers in cold and stormy weather. Includes water repellent, knitted and face-shielding types.

Stringer's Tool Pouches 424
Utilities Safety Supply Co. A wide variety of leather tool pouches for stringers, linemen and electricians are described and illustrated in this 8-page bulletin. Includes open, flap, and multiple pouches, bolt & nut bags, belts, etc.

MAINTENANCE

Monolithic Lining Armors 425
Klemp Metal Grating Corp. Illustrated brochure shows uses of open steel gratings as armors and retainers for castable refractory monolithic linings in cat crackers, reactors, regenerators, heaters, strippers, stacks, ducts, furnaces, tanks, etc.

Wood Floor Bulletin Poster 426
National Sanitary Supply Association. This large bulletin board poster highlights the causes and cures of some of the common problems of wood floors. Emphasis is on the need for sealing wood against water and other liquids and against traffic erosion.

Vibration Isolation 427
The Felters Co. This illustrated reprint of a magazine article, "The Story of Vibration Isolation", explains what the isolation of machinery is, how noise & vibration are reduced, and what methods and materials can be used.

EDUCATIONAL & VISUAL AIDS

Efficiency Signs 428
Stonehouse Signs, Inc. This 4-page folder, illustrated in full color, shows a variety of safety and efficiency signs, with the general theme that a safe worker is a more efficient worker. Includes sizes and prices for these enamel-metal signs.

Safety Incentive Program 429
Award Incentives, Inc. This illustrated bulletin outlines the features of a successful

(Continued next page)

MAIL POSTAGE PAID CARD

FOR MORE DATA

SPECIAL OFFER BELOW VALID ONLY FOR THREE MONTHS AFTER PUBLICATION DATE

READER'S INQUIRY CARD

HOW TO GET FREE DATA! **(No Postage Required)**

ADVERTISED PRODUCTS: Just insert the key number shown under each advertisement in the boxes below.

NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item.

FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

November, 1955

Please send me the following free data (Remember to fill in your name and addres

PLEASE PRINT

Name _____ Title _____

Company Name _____

Street Address _____

Free Bulletins (Cont'd)

program to promote safer driving in a trucking fleet. Gives a case history of a program utilizing pins, watches, rings, knives, pens, etc.

Double-Message Signs 430
Irwin-Hodson Co. This bulletin includes a sample of the laminated plastic from which these signs are made. The series of plastic lenses are arranged so that two different safety messages, in different colors, can be seen depending on the position of the observer.

WASHROOM SANITATION

Waterproof Skin Cream 431
Cadet Laboratories, Inc. Illustrated folder describes a protective skin coating containing lanolin that is unaffected by perspiration and shields the skin from most acids, alkalis and other aqueous solutions.

Clean Washrooms 432
U. S. Sanitary Specialties Corp. New pamphlet points out the importance of clean washrooms as a key to good public relations, whether users are employees, patrons, customers or patients. Folder also lists various products that help keep washrooms sanitary and attractive.

Cream Deodorant Soap 433
Sugar Beet Products Co. This bulletin outlines how a cream type of antiseptic soap eliminates soap waste in washrooms, is economical, and reduces maintenance work. Also includes information on dispensing equipment.

ACID HANDLING

Safety Siphon 434
Alden Speare's Sons Co. A new safety siphon is described in this well illustrated 4-page folder. Features are the plastic tubing that resists most chemicals, and the flow-control valve that varies the siphoning speed.

Acid Handling Equipment 435
American Agile Corp. Illustrated bulletin outlines the various types of products made by this company: acid-resistant plastic; plastic fabricating equipment; fabrication & installation service; laboratory ware, vapor & fume exhaust systems, fans, tanks, etc.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protection Clothing
109	Safety Belts
110	Safety Gloves
111	Foot Protection
112	Anti-Slip Soles
113	Oil-Proof Soles
114	Welding Helmets
115	Welding Curtains
	FIRST AID AND PERSONAL HYGIENE
120	Protective Skin Cream
121	Skin Cleansers
122	Sanitary Drinking Facilities
123	Athlete's Foot Control
124	Salt Tablets
125	Noise Analysis & Control
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Resuscitators
131	Eye Wash Fountains
	DUST & FUME CONTROL
135	Portable Ventilator
136	Dust & Fume Collectors
137	Carbon Monoxide Control

Key Number	Subject
	FIRE PROTECTION
140	Fire Extinguishers
141	Safety Cans
142	Extinguishing Ashtray
143	Safer Solvents
144	Degreasing Machines
145	Combustion Safeguards
146	Flammable Liquid Pumps
147	Fire Retardants
	LIGHTING EQUIPMENT
150	Alarms & Warning Lights
151	Explosion-Proof Lights
152	Electrical Insulation Tester
153	Fluorescent Lamp Guards
	FLOOR & BUILDING MAINTENANCE
160	Anti-Slip Floors & Mats
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Cleaning Machines
164	Oil & Grease Absorbents
165	Paints
	LADDERS & SCAFFOLDS
170	Ladders & Safety Devices
171	Scaffolds
172	Work Platforms
	GUARDS
175	Machine Guards
176	Power Press Feeders
177	Overload Guards
	EDUCATIONAL AIDS
180	Safety Signs
181	Aisle Marking Equipment
182	Safety Awards & Emblems
183	Employee Safety Guide

Postage Will be Paid by Addressee

No Postage Stamp Necessary If Mailed in the United States

BUSINESS REPLY CARD
FIRST CLASS PERMIT NO. 6634, SEC. 34.9 P. L. & R., NEW YORK, N. Y.

"SAFETY MAINTENANCE & PRODUCTION"
ALFRED M. BEST COMPANY, INC.
75 FULTON STREET
NEW YORK 38, N. Y.

rvice Dept.

READER'S FREE INQUIRY CARD

for further data

on

ADVERTISED PRODUCTS,

NEW PRODUCTS,

FREE BULLETINS & CATALOGS

WHAT'S YOUR PROBLEM?

What's New

(Continued from page 72)

distributed exclusively through the Ansul sales organization.

Employing a Kalamazoo chassis, the trucks are available in six basic models. The KB 8 Model, featuring a 300 lb. Ansul dry chemical unit backed up by a 150 gallon water fog system, is expected to find wide application in industry. Other units utilizing dry chemical-carbon dioxide combinations, water fog-carbon dioxide combinations or solely water are available, depending on the types of hazards to be protected. These units are offered on either a three-wheeled 42" wide chassis, suitable for in-plant use, or a four-wheeled 48" wide chassis with more road clearance and a larger engine for indoor-outdoor use. Trucks are 10' long and 5'8" high.

Accessories available on the units include ladders, utility bar, light, hose, portable fire extinguishers and extra nozzles, all mounted with panic-proof, quick release brackets to make their removal by one man simple and fast, even in darkness. An accessory cabinet on the truck provides adequate storage room for fire blankets, boots, air masks, coats, first aid kits, etc. In addition, a flashing red light can be mounted on top of the cabinet.

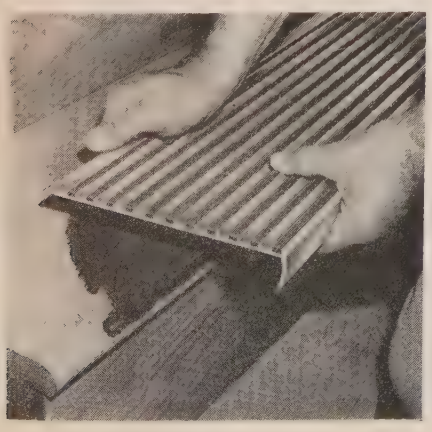
NON-SLIP STAIR TREADS

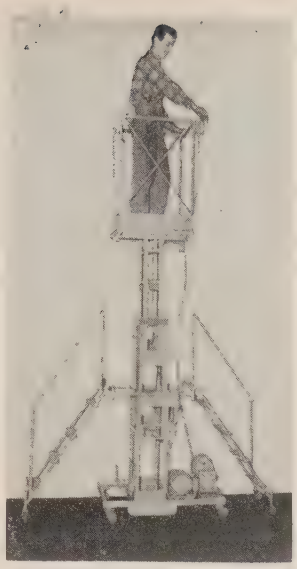
(Use Key # 660 on Inquiry Card on page 73)

WORN STAIRS can be leveled and made non-skid through the application of "Stairmaster" extruded aluminum safety treads. Not only will the stairs be made slip proof, but the heat-treated aluminum treads will add beauty to the stairs, according to the manufacturer, Wooster Products, Inc.

Eleven abrasive ribs dovetailed into the safety treads insure their slip-proof quality. Repairing worn stairs in this manner is said to be less expensive than rebuilding the worn treads. More and more aluminum is being used in architecture and extruded aluminum safety treads blend with the decor of most buildings.

The new safety treads come in a standard width to fit all stairs and are factory cut to length as required. The treads are drilled for easy installation, and the manufacturer can also provide leveling compound for leveling worn steps.





STOCK ROOM SERVICER

(Use Key # 661 on Inquiry Card on page 73)

THE INTRODUCTION of a new "Stock Room Servicer" has been announced by Atlas Industrial Corp. This new unit makes everything in the stock room easily accessible. It is easy to make use of the high, hard-to-get-at spaces in stock rooms, warehouses, etc. The Stock Room Servicer is easily rolled and easily maneuvered in aisles, hallways, doorways and other light spaces. The unit can reach any desired height and collapses to 42". It can raise or lower heavy materials. Electrically operated on house current or battery. Ladders are furnished on either side or both sides to users specifications.

HEAD AND FACE SHIELD

(Use Key # 662 on Inquiry Card on page 73)

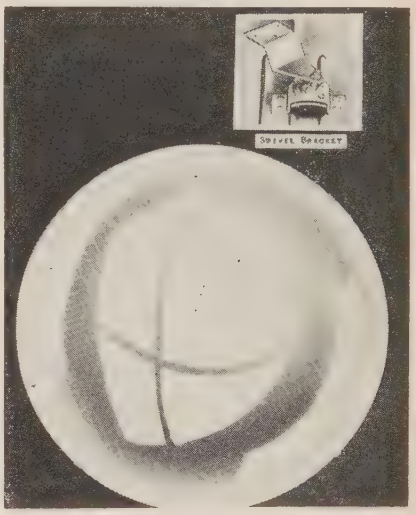
A CLEAR acetate visor which gives excellent frontal and side face protection against abrasive particles, flying objects and chemical splashes, has been developed by Mine Safety Appliances Company. Called the M-S-A Skullgard-Faceshield, it can be attached to any M-S-A protective hat without marring the hat and can be installed or removed in seconds. An aluminum pivot arm permits the shield to be swiveled up or down in any desired position. The visors are easily detached from the pivot arm for replacement.

HYDROGEN SULFIDE REPLACEMENT

(Use Key # 663 on Inquiry Card on page 73)

FROM THE Fisher Scientific Co. comes a high-purity reagent Thioacetamide with individual lot analyses. Assay: 98.5% melting point: 112–114°C; residue upon ignition: 0.01%. The reagent can be used as a satisfactory substitute for gaseous hydrogen sulfide. Although hydrogen sulfide has been used for years in both qualitative and quantitative analysis, its disadvantages include toxicity and odor.

Thioacetamide does not have these disadvantages, and it will perform some analytical separations impossible with H_2S. Other benefits are: its precipitates are coarsely crystalline, dense, easily filterable, less contaminated with foreign ions; by controlling the temperature of the thioacetamide solution, you can control the rate of hydrolysis, thereby regulating the rate of precipitation of the sulfide; no special equipment is required for its use, such as gas generators, delivery tubes; because cations can be precipitated with very small amounts, a hood is seldom needed.



INDUSTRIAL TRAFFIC MIRRORS

(Use Key # 664 on Inquiry Card on page 73)

THE ADDITION of two larger sizes of circular convex glass mirrors to their present line of Klear-Vu Safety Mirrors for industrial use is announced by Lester L. Brossard Co. One size measures 30" in diameter, the other 36" in diameter.

Klear-Vu Safety Mirrors are especially designed for use in factories and warehouses where blind corners, cross aisle intersections, entrances and exits present a problem because of traffic accidents. Installed in these locations at a height of 8 to 10 feet, these convex mirrors clearly reflect for a considerable distance the movement of oncoming floor traffic from opposite directions. They are easily installed and quickly adjustable for any desired angle. Mirror head is strongly supported with a patented 3 inch swivel stud assembly and a mounting bracket. The circular convex mirrors and the flat rectangular glass mirrors are also adaptable for outdoor use around parking lots, loading dock areas and other points where traffic converges.

CLIP-ON COVER LENSES

(Use Key # 665 on Inquiry Card on page 73)

A SIMPLY designed spring clip holds melter's safety spectacles or protective shields of clear or tinted plastic. Sold under the name of KIM-CLIP, it snaps in place on all types and makes of prescription lenses. Adjustable to three definite positions (Up, Out, or Down), it is light weight, convenient, practical and inexpensive. For those who wear prescription lenses, they afford positive protection in welding and grinding operations and make ideal sun glasses for outdoor wear. Made by Kimball Safety Products Co.

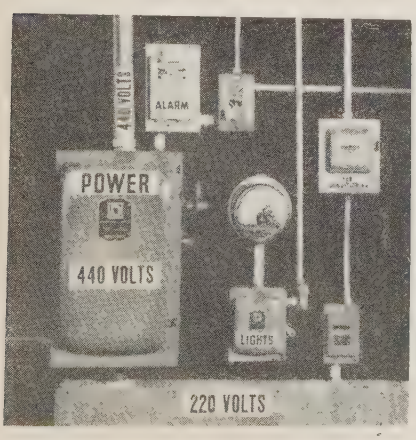
ELECTRICAL MARKERS

(Use Key # 666 on Inquiry Card on page 73)

TO FILL a vital safety and maintenance need, the W. H. Brady Co. developed a self-sticking Conduit and Voltage Marker to identify conduit, busways, circuit breakers, control centers, power switches, power lines, switchboards, transformers, utility switches and all types of electrical equipment.

The markers are made of Brady #B-500 non-conductive cotton cloth, with bold, black lettering on Alert Orange background. They come mounted on handy dispenser cards which protect the heavy, industrial-grade adhesive until used. They can be applied in seconds and will stick permanently.

Three styles are available to fit any size piece of equipment, from conduit to switch boxes. They are available from stock in all NEMA voltages from "110 Volts" to "7200 Volts" and with the names of the most common circuits, such as "Emergency Service," "Power," "Lights," "Fire Alarm," "Telephone," "AC," "DC," etc.

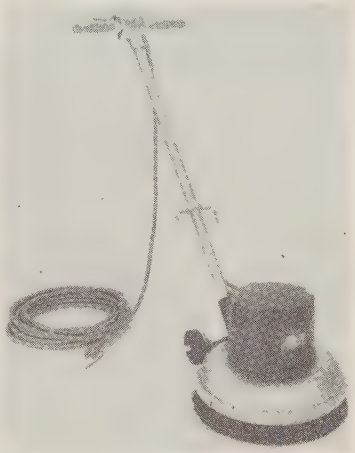


HAND-OPERATED CARBOY PUMPS

(Use Key # 667 on Inquiry Card on page 73)

HAND-OPERATED pumps, for all standard-size glass carboys, and designed for use where acids, alkalis, and other corrosive liquids have to be transferred in small quantities, have been developed by the American Agile Corporation. These pumps are completely fabricated of unplasticized polyvinal chloride, and are not attacked by most of the usual corrosive liquids.

Two types are available, one equipped with a plain outlet, the other with a polyethylene stopcock, for better control of the flow. Both are designed to fit tight in the neck of the carboy.



IMPROVED FLOOR MACHINE

(Use Key # 668 on Inquiry Card on page 73)

THE NEW Vestal Floor Machine for scrubbing, waxing, polishing, and light sanding features quiet operation, perfect balance, easy handling, safety switch, drip proof motor and gear assembly. It is designed with a low center of gravity, which eliminates vibration and assures a well-balanced, smooth operating machine with uniform working contact between the brush and the floor.

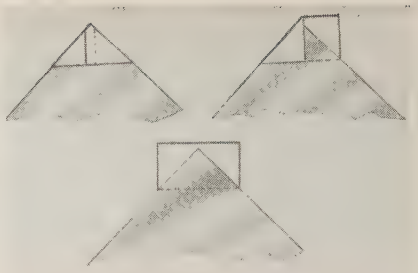
The motor is a capacitor type of simple design that does not have brushes and provides quiet operation. It has high starting torque and a built-in ventilating system. The brush-driving mechanism revolves on two heavy duty Timken tapered roller bearings and the idler gear revolves on heavy duty double row ball bearings.

The machine is available in two sizes, ½ H.P. and ¾ H.P. It carries a full year guarantee against defective material and workmanship. A full line of brushes and accessories are available.

CORNER-PADS FOR SHEET METAL

(Use Key # 669 on Inquiry Card on page 73)

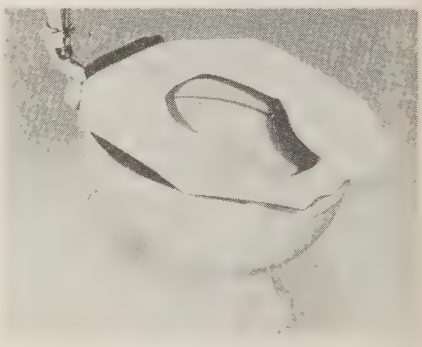
THESE CORNER-PADS are inexpensive pressure-sensitive cushions designed to prevent the costly scratching and gouging of finished surfaces and injuries to employees during shop handling of sheet metal. Made by By-Buk Co., they are designed in convenient form for quick and



easy application to each corner of metal sheets at the time they are removed from the crate or bundle, and to new corners that are formed as fabrication progresses.

They are made of very tough and thick, treated paper stock having unusually high resistance to piercing. Aggressive high-tack pressure-sensitive adhesive holds them securely in position during all handling operations. Available in two sizes, with the same amount of pad protection at the corners. The larger has nearly three times as much area of adhesive contact with the metal and will therefore withstand greater displacement forces.

The corner-pads are supplied in rack size rolls which are partially scored so they can be separated into pocket size swatches.

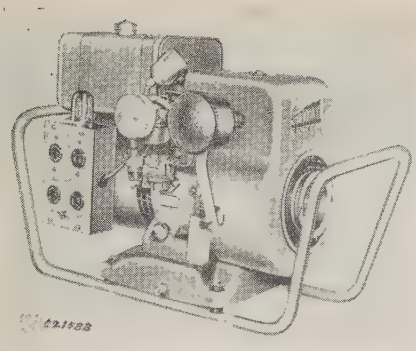


PAPER TOILET COVERS

(Use Key # 670 on Inquiry Card on page 73)

FOR PUBLIC restrooms in factories, railroad and bus terminals, hotels, stores and offices, paper toilet seat covers are designed to provide a physical barrier against contact with infectious bacteria. Their use is said to reduce the cost of maintaining a clean and sanitary restroom, and enhances the over-all appearance of the area.

The Clark Paper Converting Corporation has introduced a new Shieldor brand line of paper toilet seat covers and dispensers that incorporate many major innovations. The envelope pack has a large capacity, 250 individual folded covers, for a saving in janitorial time required to re-fill. The cover design incorporates a center flap that assures automatic disposal when the toilet is flushed. The fast-disintegrating tissue will not clog the plumbing. The Shieldor Fortress model dispenser is of a new streamline design, made of durable Hi-Impact Styrene, and is available on special order in a wide range of pastel and standard colors to harmonize with modern colored fixtures and decor. A special "bar" attachment enables the installation of the dispenser on marble or tile without drilling holes.



PORTABLE ELECTRIC PLANTS FOR FIRE DEPARTMENTS

(Use Key # 671 on Inquiry Card on page 73)

A NEW LINE of portable electric generating plants, specifically designed for Fire Department use, has recently been announced by D. W. Onan & Sons Inc. Ranging in size from 750 to 2500 watts A.C., these single-cylinder electric plants provide reliable on-the-spot electric power for fire-fighting and rescue work, floodlights, tools and public address systems.

Compact, quick to start and simple to operate, these new models lend themselves to either type of normal fire rig installation . . . mounted on the running board for quick portability or permanently mounted in a compartment on the vehicle. Basic models are equipped with pilot light, grounding stud and 4-receptacle outlet box for multiple use of motor-driven equipment. Important accessories, including quick-release mounting brackets, recoil starters and carrying frames, make these portable generators more versatile than ever.

ICE MELTING PELLETS

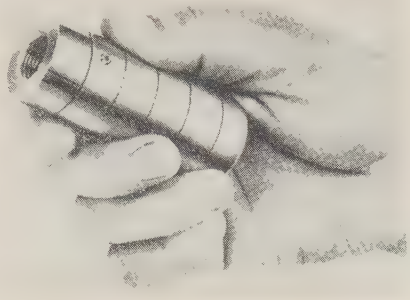
(Use Key # 672 on Inquiry Card on page 73)

EFFECTIVENESS of "Ice Rem," ice and snow melting pellets, is increased by the addition of a new chemical ingredient, according to Speco, Inc. The new element, said to retard rust action and increase storage life, consists primarily of a specially formulated "essential" oil.

It is reputed to create a moisture seal within the container and to prevent chemical decomposition. As a result, storage life is lengthened and danger of loss when warehousing between seasons is eliminated.

Use of the new ingredient is also said to stimulate action of phosphate-type rust inhibitor. Consequently, it safeguards against excessive rust in the deicing of metal pipes, drains, downspouts, railway switches, metal loading ramps and curbs. When used on drives and streets, it retards rusting on automobiles, trucks, buses and road machinery.

According to the manufacturer, Ice Rem is an activated chemical that has 30 times the thawing capacity of salt. A light sprinkling on slippery surfaces is said to remove ice and snow without harming vegetation, rubber, asphalt and paved surfaces. It is available in 10-lb. cans, 25-lb. pails and 100, 200, 300 and 500-lb. drums.

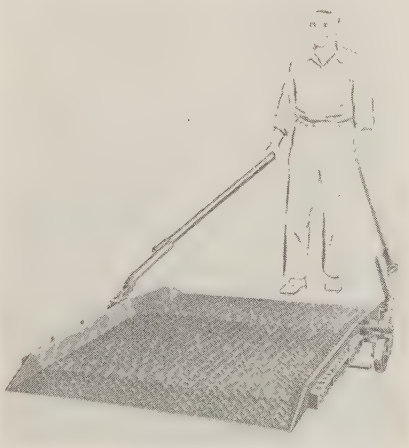


PNEUMATIC MUFFLERS

(Use Key # 673 on Inquiry Card on page 73)

QUIETAIRE Pneumatic Silencers, which eliminate noise-shock from air-operated equipment, are now being offered nationally. Heretofore they have been supplied only to automotive manufacturers. Made by C. W. Morris Co., the all-metal units reduce sound in noise-shock areas close to the level found in the average factory (75 decibels). Tests show that operating efficiency is in no way impaired while the noise is dampened.

The silencers have no "cartridges"—no parts that need replacing. They are corrosion-resistant and are safe for any pressure normally encountered in industrial pneumatic service. Produced in four models, they will fit practically all industrial air-operated equipment. They are compact and easily attached. Distributor inquiries are invited.

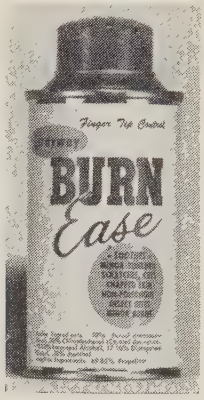


ONE-MAN DOCK PLATE

(Use Key # 674 on Inquiry Card on page 73)

AN IMPROVEMENT that permits the handles and wheels of the new Rollway Steel Dock Plate to be telescoped and rotated completely out of the way has been announced by the Woodford Manufacturing Company. The new design makes moving and setting the dock plate into working position a simple one-man operation.

Once the dock plate is in position, the handles are moved forward and down, an action which lowers the plate to the floor and automatically raises the rubber-tired wheels and folds them 90 degrees to a flat position. Any load that will clear the low side rails will easily clear the wheels. Moving the plate again is a simple matter of raising the handles up and back. This automatically positions the wheels for easy rolling.



AEROSOL ANTISEPTIC

(Use Key # 675 on Inquiry Card on page 73)

A HANDY new aerosol product for soothing relief for sunburn, cuts, scratches, and bruises has been introduced by the Tru-Pine Company. According to the manufacturers, Sprayway Burn Ease kills germs and bacterial growth and reduces the danger of infection; dulls the nerve endings surrounding cuts and scratches, reducing pain; and is a non-toxic germicide.

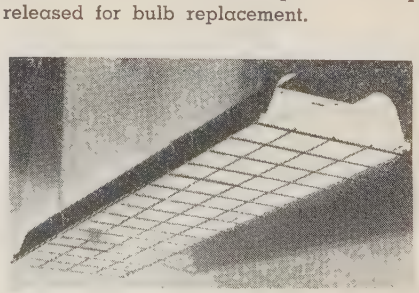
Burn Ease is simple to use. Pressure on the button releases a fine mist to cover the wound.

FLUORESCENT LIGHT GUARDS

(Use Key # 676 on Inquiry Card on page 73)

DESIGNED especially to permit use of fluorescent lighting in special industrial applications and school gymnasia, this attractive welded wire guard combines light weight and strength to meet safety regulations.

The guard requires no screws or other hardware for installation. Three retaining hinges clamp the guard firmly over the flanged edge of the reflector. On the opposite side, two wire clamps are easily released for bulb replacement.



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Now that you have passed judgment on these accidents, let's review the answer to see how well you made out. Don't be disturbed if you didn't get a perfect score. Very few safety men have! Each case should have been scored as a "preventable" accident.

11. Caused by our driver. Raucous use of the horn serves only to panic pedestrians, causing them to recoil often into danger. Had our driver courteously slowed down, this accident would not have occurred.

12. Caused by our driver. Driver should realize that the door of any parked vehicle, along the road is apt to be swung open in his path; therefore, he should learn to drive at a distance, where practicable, at least four feet from the parked cars or just beyond the arc of the swing of a given door. Our driver could have prevented this type of accident by staying away from parked cars.

Stonehouse SIGNS

FOR INDUSTRIAL ACCIDENT PREVENTION

THE safe worker really looks and acts it. He comes to the job with a feeling of security —and the standard of his work shows it.

The promotion of safety by Industry is a great accomplishment. It pays not only in safeguarding life and limb, but in higher morale, improved skills, better production.

STONEHOUSE SIGNS

Workers respond to safe conditions when guided by proper warnings and instructions. Keep telling them—with Stonehouse Signs that inform them of hazards and dangers. This is true accident prevention.

Write for our complete Catalog— 64 pages, in full color. It's free.

Stonehouse SIGNS, inc. MANUFACTURERS • Stonehouse Bldg., 9th at Larimer
Denver 4, Colorado

"Signs Since 1863"

ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For details, use Key # L-37 on card on page 73)

Thantis® LOZENGES

first aid for throat irritations

SORE THROATS due to coughs and colds, if neglected, may result in lost man hours of work.

THANTIS® Lozenges contain no antibiotic; they produce no unpleasant by-reactions in the mouth.

THANTIS Lozenges relieve pain promptly—reduce infection—act prophylactically.

Twenty-three years' extensive clinical and lay use has proved the safety and effectiveness of this popular product.

® Reg. U. S. Pat. Off.

Mercurochrome®

First aid for wounds . . .

Neglect may cause infection which can be prevented by prompt use of 'Mercurochrome.'®

No antiseptic has been proved to be more effective than 'Mercurochrome' for topical application.

HYNSON, WESTCOTT & DUNNING, INC., BALTIMORE 1, MARYLAND

(For details, use Key # L-38 on card on page 73)

Safety Maintenance

and Production

EST. 1901 • AMERICA'S PIONEER MAGAZINE IN ITS FIELD • DECEMBER, 1955 • 50¢

FIRE waits for no one!

When fire strikes, be ready **instantly** with the GARDWELL Fire Blanket Container, designed for speed, simple operation and your safety. Operation is simpler than other types . . . blanket SLIDES OUT the very second the release handle is pressed. The GARDWELL container is water-tight, dust-free and enamelled eye-catching red.

ALSO — the GARDWELL Fire Blanket Container may be hung on the wall in an upside-down position . . . lid on top . . . as a fire prevention receptacle for oily waste and other fire hazard refuse.

GARDWELL No. 40 Woolen Blankets are essential in first aid cases in the plant as well as fire cases, as pillows for the injured or to retain body-heat in treating shock cases. Every department should have one or more.

TOUCH the release, Blanket *DROPS* . . . YOU'RE READY!

MAY BE SEALED FOR INSPECTION*

*Take ordinary shipping tag with eyelet; run a soft wire or twine thru the metal ears on the container. Date the tag when you seal.

GARDWELL No. 1940 FIRE BLANKET CONTAINER and FIRE BLANKET

METAL CONTAINER — (illustrated) Overall height, 20 inches. Diameter, 9 inches. 22 gauge metal. Color red. Weight with woolen blanket, 11½ pounds; empty, 7½ pounds.

BLANKETS — Unless otherwise specified, container comes with 66 x 84 inch woolen blanket, weight 4 pounds. Asbestos blankets can be furnished at extra cost. For quick smothering of fires they are as useful as woolen blankets and are practically indestructible.

HOW TO ORDER —

No. 1940 Container with woolen Fire Blanket
No. 1941 Container with Asbestos Blanket
No. 40 Wool Blanket, size about 66 by 84 inches
No. 41 Asbestos Blanket size 66 by 80 inches
No. 19 Container only without Blanket

DEALERSHIPS INVITED

GARDWELL Products

Safety CLOTHING AND EQUIPMENT Co.

DESIGNERS AND MANUFACTURERS

1990 EAST 69TH STREET • CLEVELAND 3, OHIO

PHONE HENDERSON 2-0400

DESIGNERS and MANUFACTURERS of a *complete* line of Safety Clothing and Equipment

ASBESTOS, LEATHER, DUCK, PERMA-PROOF, JAXCOLITE AND ALUMINIZED COATED MATERIALS, ETC.

(For details, use Key # M-1 on card on page 71

VI-LAN CLEAN

SELF-SERVICE UNIT

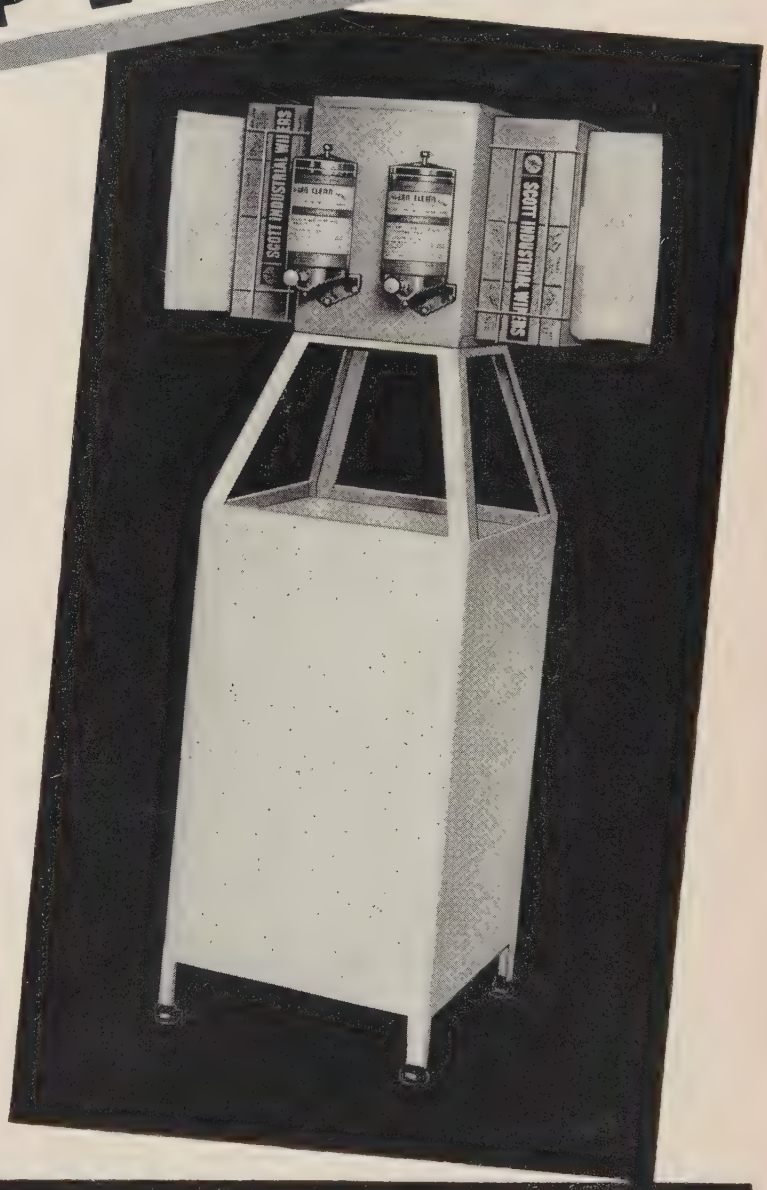
No. 815

The dispensing service unit that is well nigh INDISPENSIBLE

VI-LAN CLEAN
fortified with Actamer
the wonderful bacteriostat created
by the Monsanto Chemical Co.

EQUIPPED FOR SCOTT INDUSTRIAL WIPERS

Now You Can Actually Control Dermatitis



The illustration shows the stature of this new VI-LAN CLEAN SELF-SERVICE UNIT, No. 815, equipped with two VI-LAN CLEAN dispensers, two No. 939 Industrial Wiper Brackets for SCOTT INDUSTRIAL WIPERS, and a waste disposal bin of large capacity. This dependable and ever-ready on-the-job washroom service unit, which may be used with or without water, comes to the fore as a needed item in every factory and industrial plant. Managers of production and safety departments praise it, want it and install it, because it saves time, money and lost man hours, insuring industrial health, cleanliness and overall economy. VI-LAN CLEAN is a perfect all-purpose skin cleaner, activated with a potent bacteriostat which overcomes dermatitis and other skin ailments. It contains ACTAMER, a product of Monsanto Chemical Company, and is approved by the American Medical Association. VI-LAN CLEAN does what soap can not do.

Write for descriptive folder TODAY

DAMERON ENTERPRISES

INCORPORATED

427 So. 20th Street — Louisville 3, Kentucky

(For details, use Key # M-2 on card on page 71)

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type 1551-A ...why this is the Standard In Sound-Level Meters

Type 1551-A
Sound-Level Meter
$360.00

Fundamentally, the Type 1551-A Sound-Level Meter consists of a non-directional microphone, a calibrated attenuator, an amplifier, weighting networks to make the amplifier conform with the response of the human ear to pure tones, and an indicating meter.

This instrument's standardization agrees with specifications established by the Acoustical Society of America, the American Standards Association and the American Institute of Electrical Engineers.

Easy To Operate — Sound-level is conveniently indicated by sum of meter and attenuator readings. Meter has accurately readable 16-db scale — adjustable attenuator has range of 100 db in 10-db steps.

Wide Range — Total sound-level range is from 24 db to 140 db above the standard sound-pressure level — Type 1551-P11 Attenuator Pad ($15) plugs into filter jacks extending range upward to 154 db.

Crystal Microphone — Essentially non-directional, Rochelle-salt microphone has good frequency response and sensitivity.

Four Weighting Networks — Three frequency characteristics are available for approximating the response of the ear at sound levels of 40, 70, or 85 db and higher — fourth "20 kc" position provides flat amplifier characteristic from 20 cycles to 20 kc for use in analysis and with wide-range microphones.

Substitute Weighting Networks — Filter jacks permit modification of frequency characteristics by insertion of special weighting networks.

Internal Calibration — Accuracy — "CAL" button permits simple and accurate adjustment of amplifier gain for standardizing instrument sensitivity against any 115-volt a-c power line — upon standardization, accuracy of sound-level measurements is within 1 db for average machinery noises in accordance with A.S.A. standards.

Analysis of Sound Spectrum — Separate amplifier provides low-distortion output for headphones, sound-analyzing or recording equipment. Connections to this jack do not affect panel-meter readings.

Stability — Amplifier is stabilized by inverse feedback — readings are independent (within 1 db) of temperature and humidity over the ranges of room conditions normally encountered.

Meter Damping — Switch damps panel meter for either steady or rapidly fluctuating sound levels — in FAST position, ballistics of meter simulate those of the human ear and agree with A.S.A. standards.

Convenient Automatic ON-OFF Switch — Swivel-mounted microphone folds into panel recess and automatically turns off instrument.

Sturdy Aluminum Case — Light-durable aluminum case is strong, neat, compact, and provides complete shielding. Complete instrument weighs only eleven pounds, with batteries — over-all dimensions are $6\frac{5}{8}$ x $10\frac{13}{16}$ x $8\frac{7}{8}$ inches.

Shock Mounting — Reduces effects of vibration — special tube suspension reduces microphonics.

Batteries Readily Available — Flashlight and portable radio "B" Batteries are used for easy replacement. Four-terminal receptacle for connection to optional a-c power supply permits use of the Type 1262-A Power Supply, $75, in place of batteries, where continuous operation is desired.

Write for the G-R Sound-Measurements Bulletin for Complete Descriptions, Specifications and Prices

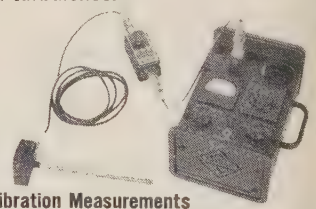
ACCESSORIES
for Every Sound Measurement

Additional Microphones

Condenser, Dynamic or ADP Microphones are available for accurate measurement of the higher audio frequencies, to eliminate effects of severe environmental conditions, and for high-level measurements to 200 db.

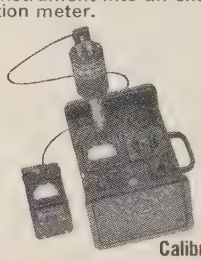
Narrow and Wide Band Analyzers

Type 760-B Sound Analyzer is best suited to measurement of "pitched" sounds produced by rotating, reciprocating or other cyclic mechanisms where the prevalent frequency components are harmonically related — G-R Type 1550-A Octave-Band Noise Analyzer is designed for rapid, convenient broad-band analysis of sound whose energy is widely distributed over the audio spectrum and is usually caused by shock excitation, impact or turbulence.



Vibration Measurements

A Vibration Pickup and Control Box are available for use with the Sound-Level Meter, converting the latter instrument into an excellent vibration meter.



Convenient Calibration System

Type 1552-B Sound-Level Calibrator permits rapid and reliable calibration of the complete Sound-Level Meter system from microphone to meter — compact Type 1307-A Transistor Oscillator is 400-cycle power source.

WE SELL DIRECT
Prices are net, FOB Cambridge or West Concord, Mass.

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in Electronics

(For details, use Key # M-3 on card on page 71)

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Safety Maintenance and Production

formerly "SAFETY ENGINEERING"

Volume 110, Number 6 **December 1955**

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Cover picture by courtesy of Shell Oil Company

AMERICA'S PIONEER MAGAZINE IN ITS FIELD

SAFETY MAINTENANCE & PRODUCTION is indexed regularly by Engineering Index, Inc., New York

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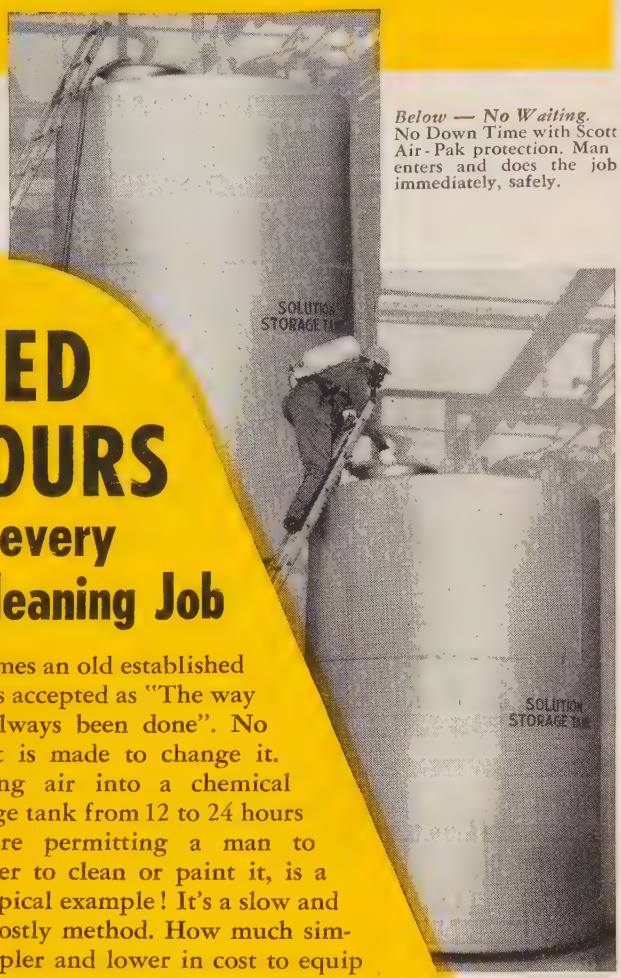
Below — No Waiting. No Down Time with Scott Air-Pak protection. Man enters and does the job immediately, safely.



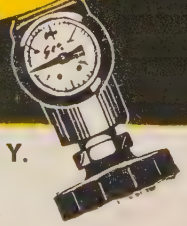
SAVED 24 HOURS on every Tank Cleaning Job

• Many times an old established practice is accepted as "The way it has always been done". No attempt is made to change it. Blowing air into a chemical storage tank from 12 to 24 hours before permitting a man to enter to clean or paint it, is a typical example! It's a slow and costly method. How much simpler and lower in cost to equip a man with a Scott Air-Pak — open the tank and let him go to work Immediately — Safely and Quickly!

On Hazardous Jobs Scott Air-Paks Help Management and Labor Breathe Easier

Does tank cleaning and painting play a part in your process? Let us tell you more about the Scott Air-Pak Way.

Write for free booklet "Scott Air-Paks Save Money, Man Hours and Men for Industry!"



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(For details, use Key # M-4 on card on page 71)

CHECK LIST of aids to production

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SEND THIS PERSONAL SAFETY MESSAGE

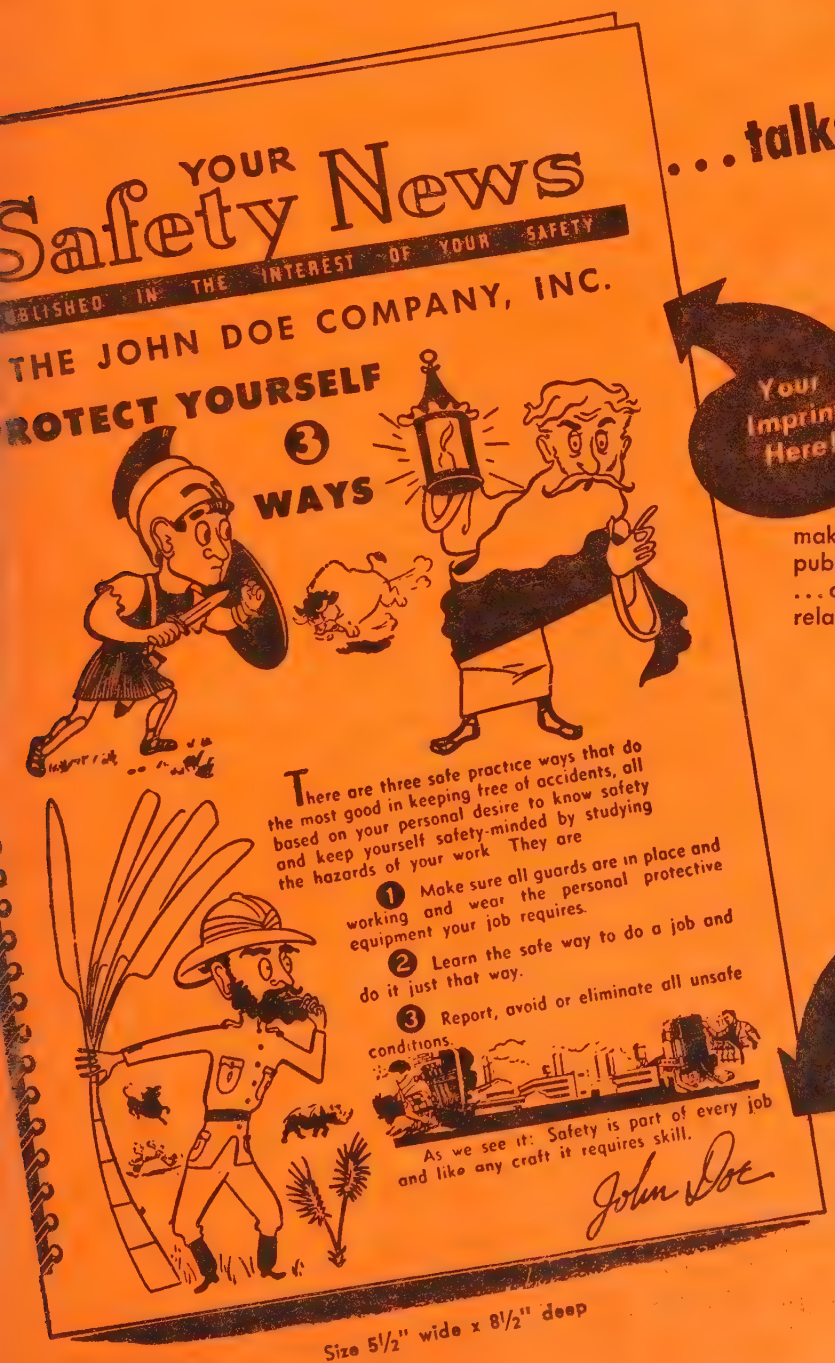
TO EVERY ONE OF YOUR EMPLOYEES!

Safety is made attractive...vivid...colorful...

each worker clearly sees how safety benefits him.

You get enthusiastic safety cooperation instead of

tolerance...from every employee...every month.


YOUR
Safety News
IN THE INTEREST OF YOUR SAFETY
THE JOHN DOE COMPANY, INC.
ROTECT YOURSELF
3
WAYS
There are three safe practice ways that do the most good in keeping free of accidents, all based on your personal desire to know safety and keep yourself safety-minded by studying the hazards of your work They are
1 Make sure all guards are in place and working and wear the personal protective equipment your job requires.
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3 Report, avoid or eliminate all unsafe conditions.
As we see it: Safety is part of every job and like any craft it requires skill.
John Doe

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Full of color, pictures, humor and snap, it makes safety interesting and down-to-earth. 12 times a year it covers every accident hazard. Nationwide, leading industrial firms state it's the *only safety paper their employees will read* . . . and take home to their families.

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Your Signature Here

NOTE:
Your Safety News is designed to promote better employer-employee relations. Every item is carefully weighed from this viewpoint.

ISIDE PAGES
(pages 2 and 3)

Lions & Machinery have Hungry Jaws
YOU DON'T HAVE TO TWIST ITS TAIL
NEVER REACH INTO MACHINERY WHILE IT IS RUNNING!
Guard Well!
WANTED
From the CARELESS ACTS of others the WISE MAN corrects his own
SAFETY SHOES
WORK OVERTIME
Dress for Safety
SAFETY SHOES
FALLS
FALLS KILL 10 EVERY DAY

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Your employee's self interest in his own safety is always emphasized. Even household hazards are covered to keep him safety-conscious every minute, not only in the plant, but at home and on the way to work.

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Keeping the contents folksy, adding the grace note of humor, delivers your safety message with a nudge instead of a bludgeon. Your monthly chat gets enthusiasm instead of tolerance.

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Generous use of color gives sparkle, adds to the attention-riveting qualities of YOUR SAFETY NEWS. Each issue is as lively as any news-stand favorite.

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YOUR SAFETY NEWS may be ordered with either the Standard imprint or with your Own Special Imprint. The Standard Imprint reads PLEASE COOPERATE FOR THE SAFETY AND HEALTH OF ALL . . . signed . . . A SAFE WORKER.

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Item (2) INDIVIDUAL NAME OR SIGNATURE, if desired. On a sheet of white paper, please show, in black ink, the individual name or signature, if desired, which is to appear each month on the first page of YOUR SAFETY NEWS.

Clip Out & MAIL TODAY!

NOTE: Although a personal signature is effective, some firms substitute: SAFETY DEPARTMENT, YOUR SAFETY COMMITTEE, A SAFE WORKER, etc.

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it's SAFE to say

● KEROSENE HAZARDS

IN THIS country we take proper pride in our standard of living which is reaching a constantly mounting level under our form of government. We can boast of superior gadgets, colored kitchen conveniences undreamed of in other countries and ultra-modern devices which make life easier for every member of the family.

However, all is not so serene in every single segment of our society since the most perfect ideological scheme ever devised by man must encompass those less privileged than others. On Thanksgiving morning, a portable oil heater in a New York kitchen exploded. The toll? Three small children dead of asphyxiation and the mother rushed to a hospital suffering from serious burns.

Ironically, this tragedy occurred just two days after the City Council of New York passed legislation outlawing the future use of kerosene heaters.

It is hoped that very soon kerosene heaters will take their place beside other archaic conveniences(?) of the dim past and that no longer will American families be forced to resort to hazardous means of heating their place of residence.

In the meantime, exponents of safety can perform no greater public service than to alert their employees and their respective communities to this dangerous hazard which can snuff out human life long before the local fire department can even hope to arrive.

● S-D DAY

BY THE time this appears in print, we will have passed the second annual S-D Day, as proclaimed by the President of the United States for December 1.

Safety and civic leaders of the country will have exerted every effort to making Safe Driving Day a day for still another freedom—freedom from accidents on our streets and highways.

Under the President's Committee for Street & Highway Safety, the day was first set aside last year to throw a piercing 24-hour spotlight on the need for safe driving to reduce an accident toll which is a national disgrace.

Too many of us look upon the so-called hazardous industries of the nation as slaughter houses whose portals should carry the sign, "All Hope Abandon, Ye Who Enter Here." Nevertheless we in the safety field have every reason to know that those industries are far less lethal than our streets or even our own homes.

Picture every single life in a 36,000 population town snuffed out within twelve months. Every philanthropic, charitable and life-saving organization in the country would be mobilized to combat this threat to national security. Last year, 36,000 persons were killed in traffic accidents with an almost astronomical number of non-fatal injuries—about one every 25 seconds!

For the first six months of 1955, traffic deaths have been substantially more numerous than last year, with the month of July showing the worst record in 18 years.

By the time this appears, we will know the strength of S-D Day and whether the general public glances at the proclamation as just another "Eat More Apples" Day, or whether the importance and implications will have penetrated the thick wall of public indifference to its own welfare.

● BURNS IN INDUSTRY

IN EVERY type of industry, burns are a common hazard. Obviously, the best possible means of combatting this painful and often tragic injury is prevention.

When burns occur, whether from molten metal, steam, water, chemicals or electricity, the primary steps must include guarding against shock, severe pain, secondary infection and skin scarring.

Fortunately, there are products available for use until medical treatment is obtained but we must not compound the danger by resorting to germ-laden oils or grease which only increase the risk of infection.—H.A.

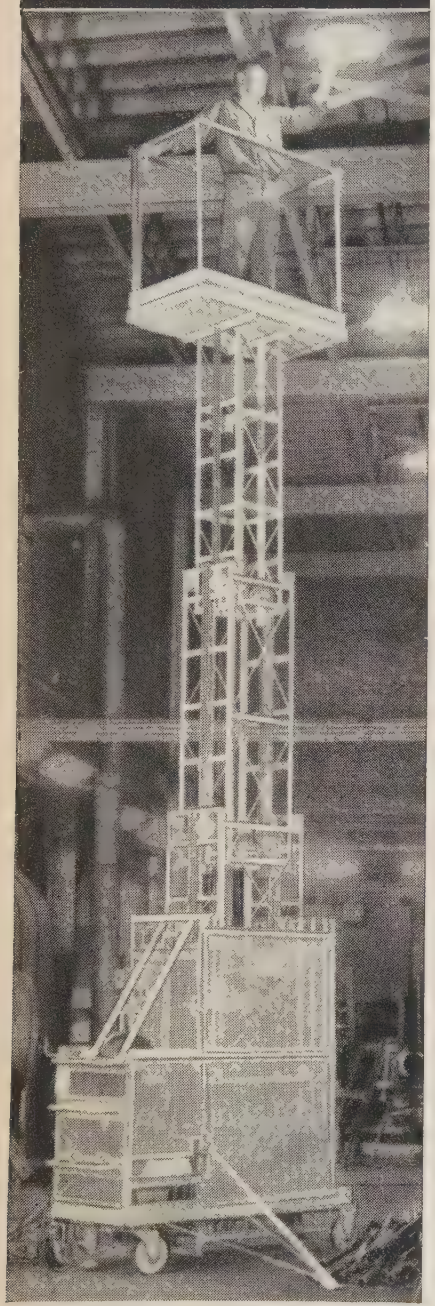
Best Wishes for a Safe and Happy Holiday Season

THE MAN WHO FEELS SAFE WORKS BETTER

Economy

HI-REACH TELESCOPER

ENGINEERED FOR STRENGTH STABILITY AND SAFETY



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ECONOMY ENGINEERING CO. EST. 1901
4522 W. Lake St., Chicago 24, Ill.
(Use Key # M-5 on Inquiry Card on page 71)

the future shows

New Orleans, La. *December 12–13*

Sixth Annual Louisiana Safety Association Conference. (Roosevelt Hotel). J. R. O'Donnell, Avondale Marine Ways, Inc., P. O. Box 1030, New Orleans, La.

Philadelphia, Pa. *January 23–26*

Seventh Annual Plant Maintenance & Engineering Show (Convention Hall). Clapp & Poliak, Inc., managers, 341 Madison Ave., New York 17, N. Y.

San Francisco, Calif. *February 2–3*

Sixth Annual California Statewide Meeting of the Governor's Industrial Safety Conference (Fairmont Hotel). Department of Industrial Relations, 965 Mission St. (Room 400), San Francisco, Calif.

Atlanta, Ga. *March 4–6*

Southern Safety Conference & Exposition (Biltmore Hotel). W. L. Groth, Executive Director, P. O. Box 8927, Richmond 25, Va.

Philadelphia, Pa. *March 7–8*

Twenty-Second Annual Philadelphia Regional Safety & Fire Conference and Exhibit (Broadwood Hotel). Walter B. Matthews, managing director, Philadelphia Safety Council, 121 S. Broad St., Philadelphia 7, Pa.

Los Angeles, Calif. *March 19–21*

Third Annual Southern California Safety Congress & Exhibit (Ambassador Hotel). Greater Los Angeles Safety Council, 610 S. Main St., Los Angeles 14, Calif.

Klamath Falls, Ore. *April 5–7*

Forest Products Safety Conference. George Metzger, Secretary-Manager, c/o Willamette Valley Lumber Operators Association, Eugene, Oreg.

Fort Wayne, Ind. *April 10–11*

Thirteenth Annual Northeastern Indiana Safety Conference & Exposition (Chamber of Commerce Building). Ivan A. Martin, manager, Safety Council, Ft. Wayne Chamber of Commerce, Ft. Wayne 2, Ind.

New York, N. Y. *April 16–20*

Twenty-sixth Annual Greater New York Safety Convention & Exposition (Hotel Statler). George E. Decker, chairman, Greater New York Safety Council, 60 E. 42nd St., New York 17, N. Y.

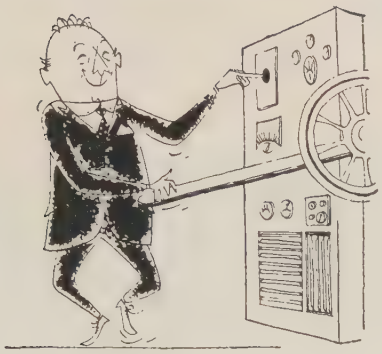
Washington, D. C. *May 14–16*

President's Conference on Occupational Safety.

Rochester, N. Y. *May 22–24*

First Genesee Valley Safety Conference and Exhibit (Rochester Chamber of Commerce Building). William H. Keeler, secretary-treasurer, Rochester Safety Council, 55 St. Paul St., Rochester 4, N. Y.

Push the button... pull the handle...



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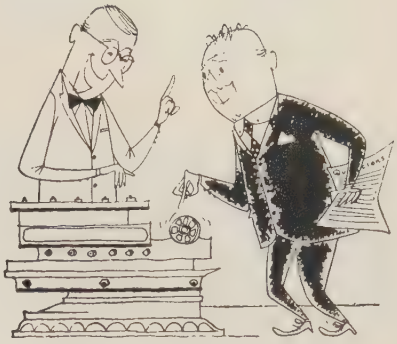
Ask the question... get the answer...



No time delay . . . immediate technical answers to solve your specific, unique problems. Talk directly to the sales engineers and technical experts, in an atmosphere of their products . . . all in one place, at one time, under one roof.

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Hear the experts . . . top men in their fields . . . discuss topics of major interest to plant maintenance and engineering executives. There's no other way to get so much information for so little investment.

(For details, use Key # M-6 on card on page 71)

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That's the brief story of superior safety factors. With these, CHLOROTHENE has very high solvent power, yet gives extremely low corrosive effects when used on all common metals and alloys.

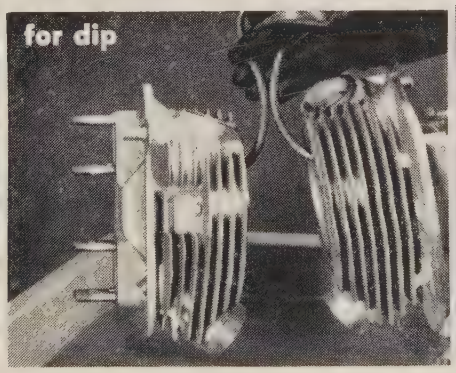
Your Dow distributor can supply CHLOROTHENE immediately. He also meets your needs for *other* stabilized chlorinated solvents: DOW TRICHLOROETHYLENE, DOW PERCHLOROETHYLENE and DOW METHYLENE CHLORIDE. For detailed technical information on any or all of these outstandingly effective solvents, just mail the coupon below to THE DOW CHEMICAL COMPANY, Midland, Michigan.

**203* *26 April, 1955*

Certificated for use as an article of stores on board vessels. This certificate covers only hazard in the use of this product. The efficiency of this product is not passed upon. U. S. Coast Guard.

†Trademark

efficiently versatile, too!



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Name _____ Title _____

Company _____ Address _____

City _____ Zone _____ State _____

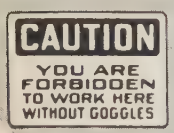
you can depend on DOW SOLVENTS

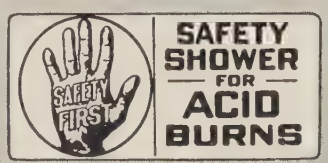
DOW

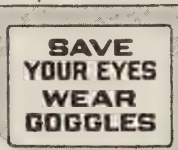
(For details, use Key # M-7 on card on page 71)

Stonehouse SIGNS

FOR INDUSTRIAL ACCIDENT PREVENTION







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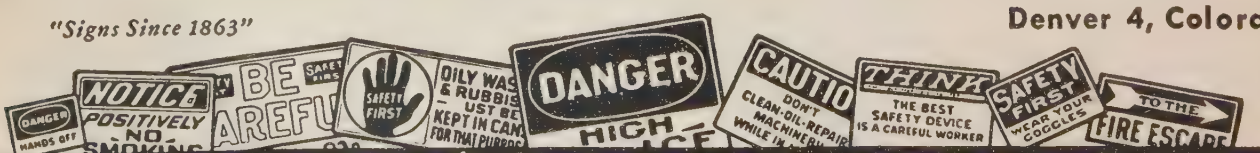


ACCIDENT PREVENTION • *steel* SIGNS IN STANDARD COLORS AND DESIGNS

(For details, use Key # M-8 on card on page 71)

SM goes to

THE

NATIONAL SAFETY CONGRESS

Safety . . . as a method to protect our national security . . . as an answer to the fifth column of accidents . . . and, as a moral and social cause . . . has apparently achieved the status of something more than "a matter of individual expediency," as it was once looked upon. Speakers at the 43rd National Safety Congress seemed to stress the esteem in which safety is now held. Large and sober audiences listened quietly and appeared to mull over the many words they heard with pride and deliberation.

The 12 thousand safety leaders gathered in Chicago for the 4-day meeting saw

(Continued on page 25)

✓ **Floor Maintenance Series**
more articles in Jan. and Feb.

How to Keep up

Wood hardwood floors are among the most satisfactory flooring materials and if properly maintained will last indefinitely. Most wood floors are of the close grain type, such as maple, beech or birch, or open grain wood such as oak. Wood is particularly porous and for that reason the floor should be thoroughly sealed with a penetrating seal. After a wood floor has been properly sealed, it is maintained simply by applying a good wax and periodically mopping.

All new floors should be thoroughly sanded prior to sealing. Sanding provides a clean, smooth, uniform surface, upon which to put the seal. Old wood floors that are coated with shellac, lacquer, varnish, wax, or other cheap seals, should also be thoroughly sanded both to clean the surface and remove the old seals.

Sealing and Finishing

The following cleaning techniques must be used if sanding is impossible:

For removing oil, grease, dirt, water-emulsion wax, scrub the surface with a solution of 1 cup of detergent concentrate to about a bucket of hot water. If water-emulsion wax is present on the surface, then add about a cup of ammonia to the solution and allow it to remain in contact with the surface for about 10 to 15 minutes, then rinse thoroughly with hot water and allow the floor to dry thoroughly.

Next, buff the surface with steel wool to smooth out any irregularities. Sweep up or vacuum the steel wool and dirt particles.

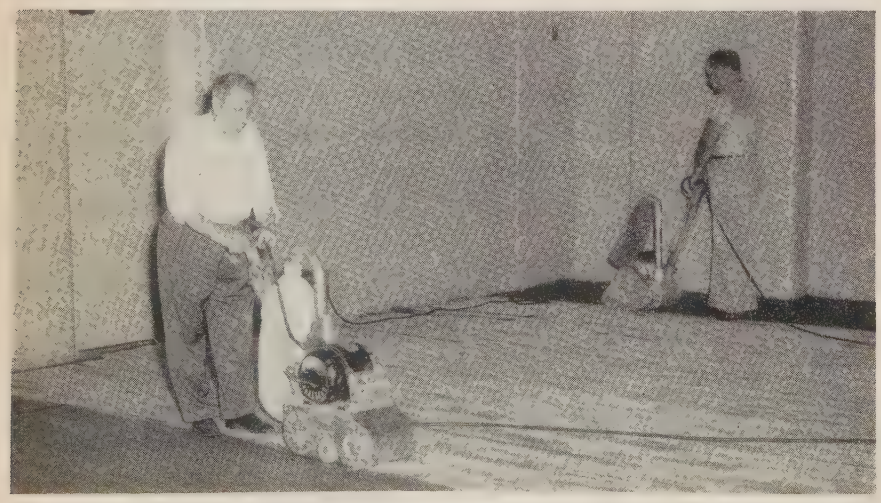
In order to remove paste wax from wood floors, scrub the surface with a solution of one part liquid scum remover to 5 parts warm water. Rinse thoroughly and when the floor is dry, buff with steel wool.

Paint and varnish can be removed by using varnish remover and scraping up all excess varnish. Next scrub with a solution of about a cup of detergent concentrate to a bucket of hot water. Rinse thoroughly. When the floor is dry, buff with steel wool.

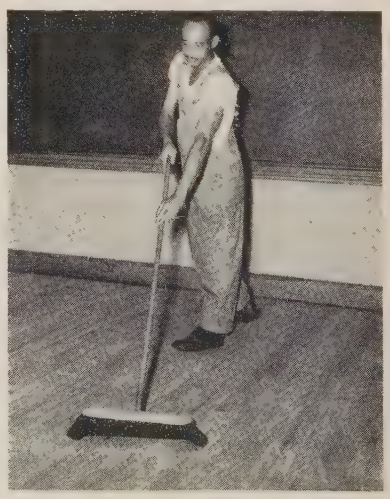
Then sweep thoroughly. Next apply a thin, uniform coat of penetrating seal diluted 20 percent with naphtha; that is, add one part naphtha to 4 parts penetrating seal. Apply, using a lambs wool applicator (preferably) or a large varnish brush. You will find a wide lambs wool applicator is much quicker and does a neater job on a large floor. The applicator must be thoroughly clean. Never rub seal into the surface—always smooth it on in thin, even coats. If bubbles appear, go over them with an almost dry applicator. The first coat is a penetrating or sealer coat and dries to the touch in about 4 to 6 hours; however the floor should not be recoated until 24 hours elapse.

The second coat is applied undiluted. If an exceptionally durable and beautiful job is required or desired, apply a coat of plastic finish, undiluted, 24 hours after the second coat of seal has been applied. Between coats, always buff lightly with steel wool to smooth out the surface. Make sure that you sweep up or vacuum all steel wool particles prior to applying another coat of penetrating seal.

Wood floors should always be treated with penetrating sealers and plastic-type top coats. You will find that an unfinished floor will become dirtier much quicker and

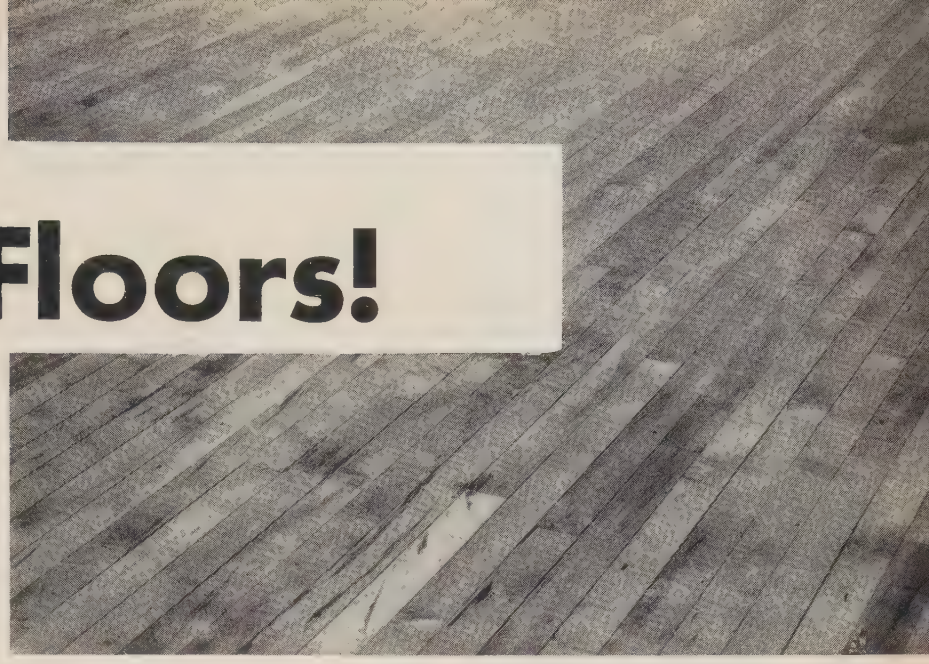


SANDING—Wood floor being sanded prior to sealing. Sanding removes old seals, waxes, and embedded dirt. This is an important first step in proper floor maintenance.



SWEEPING—Make sure no dust remains to interfere with the action of the sealer.

Wood Floors!



present a very worn appearance.

Daily maintenance of wood floors requires that all trash and loose material be picked up and that the area be swept with a large floor brush. Once a week the floor should be mopped and buffed. This is accomplished by preparing a solution of 1 to 2 ounces of all-purpose cleaner of your choice. Cover no more than a 6 by 20 foot area at one time when mopping. Wring out the mop and pick up the excess cleaning solution. Scrub difficult spots with a deck brush and scrub corners and inaccessible places with a hand brush. Rinse the floor with clean water and a fresh, clean mop. Use a minimum of water for mopping and rinsing.

When the floor is thoroughly dry, buff the area, using a floor machine with a buffing brush assuming that the floor has a coat of wax on the surface. Once or twice a month depending on the amount of traffic it receives, the floor should be thoroughly machine scrubbed and rewaxed. Sweep and remove trash as before and mop floor with a 2 to 4 oz. solution of the all-purpose cleaner of your choice to a gallon of warm water. Scrub with a floor machine or deck brush, pick up excess water with your wrung-out mop and rinse with a clean mop and clean water. Scrub corners with a hand scrub brush. Pick up as much rinse water as possible with a vacuum mopper or a wrung-out clean mop and allow floor to dry thoroughly. Next, fill a wax pan with a water-emulsion wax. Apply the wax with a clean damp mop or with a wax applicator, using long straight strokes in one direction. Spread the wax on the floor in a thin even coat. Permit the wax to dry 10–20 minutes (depending upon atmospheric conditions—heat, moisture, etc.) and then buff the floor with a floor machine and buffing brush. To remove the highlights, put a lambs wool or felt pad underneath the floor machine and buff again.

Wax should be stripped from all floors periodically. A constant reapplication of wax tends to form a build-up and discolorations around the baseboards and corners wherever the traffic is not overly heavy; consequently, it is recommended that after every 6 waxings or after 6 months, whichever comes first, all wax be stripped from the floor.

Following the stripping operation, the floor should receive two coats of wax with thorough buffing between each coat.

Sweeping Technique

Sweeping in a stooped position with a short 2 or 3 foot stroke produces backaches and extreme fatigue. The most efficient way to sweep is to use a 6 foot stroke and to keep the back as straight as pos-

SEALING—Lambs wool applicator is used to put on first coat, which is here diluted, per manufacturer's instructions.

STEEL WOOLING—Surface is smoothed between coats, then thoroughly swept, before applying final coat of sealer material.

SWEEPING

sible. This longer stroke makes the job easier, faster, and safer. Hold the broom or brush with left hand at top of handle, palm up, right hand about 2 feet lower with palm down.

Keep feet about one foot apart. Start with body weight on right foot, left side toward clean portion of floor. Move brush forward, keeping partial hold on handle and resting handle on left thumb. Swing weight to left foot as stroke is extended. Arms will be straight out in front as far as you can reach. This method gives a 5 to 6 foot stroke. The longer the stroke, the fewer number of strokes needed to cover a large area.

At the end of the stroke, lift the brush from the floor, draw it back with the right hand, guiding it with the left hand. This is done without raising dust and without jerky motions. The important thing is to have rhythm in sweeping. Rhythm, together with the long stroke and straight back will help prevent you from getting tired.

Mopping Technique

Hard wood or soft wood floors are easily warped or discolored by water or moisture; therefore, it is imperative that all floors have a protective coating on them. Harsh or alkaline soaps should not be used on wood floors; neither should powdered cleaners which leave insoluble particles which scratch the floors and damage the seal and wood surfaces.

Before mixing your cleaning solution, check condition and type of floor to see which type of cleaner and what dilution to use. Remember, too much cleaner means extra work rinsing and it is just as bad as too little cleaner. The temperature of the water should not be too high—hot water will damage many types of soft floors and most cleaners should do their cleaning jobs equally well with warm water. One exception to this rule is for stripping wax, where really hot water is recommended.

After moving furniture out of the way and scraping gum wads, etc., off the floor, select an area about 6 by 20 feet and you are ready to mop. Dip the clean mop into the solution, swish around and let it drain for a second or two. Then, starting in the farthest corner of the mopping area, fan out the mop with your arms, sweeping rhythmically and moving back and forth from the hips up. This mopping area gives you enough room to fan out and swish the mop back and forth until you have fanned a loop-the-loop figure 8 over half the floor area—overlapping half the way.

When mopping, be careful to keep a safe distance from baseboards. Use a hand brush to clean base-boards and other low areas and a deck brush to clean difficult spots on the floor.

To clean with a scrubbing machine, begin in the inner corner of a 6 by 20 foot area, moving from side to side and work backwards, overlapping all the way. When the area is larger, divide it into areas of approximately 120 square feet and do each as a separate unit.

Complete rinsing is a necessary and important part of cleaning a floor. A floor with a heavy soap film is dull and dingy and actually gets dirty faster than a really clean floor. To rinse, first pick up as much cleaning solution as possible. Then take clear water and rinse the floor several times until all traces of soap are gone. To pick up the water, a squeegee pan is more thorough than the all-mop method but a wet pick-up machine is best of all. Time required to mop and rinse will vary with the condition of the floor, of course, but with a regular maintenance schedule, certain areas should take the following length of time:

Gymnasium, hallways—2000 sq. ft. per man hour
Auditorium, theatre, etc.—1750 sq. ft. per man hour
Furnished office—1750 sq. ft. per man hour
Stairs—7 flights with landing per man hour.

After floor is mopped clean and dry, pour a few inches of wax into the wax pail, dip a damp cellulose block type applicator into the wax and apply the wax around the baseboards of the area. Next, dip a cotton or cellulose strand mop into clear water, wring it out, and dip into the wax, wring it out again, and apply to the center of the floor in this manner:

1. Take a long push stroke;
2. At the end of the stroke, move the mop to the left;

MOPPING

Begin at farthest corner of area and fan out mop with arms in rhythmic sweep motion.

Moving back and forth from the hips up, swing mop in overlapping figures eight.

Six by 20 foot area is covered at a time. It is imperative that wood floor have a protective coating or it will warp and discolor.

3. Take a long overlapping parallel stroke;
4. Continue until mop needs another dip in the wax.

One mopful will cover between 100 to 140 sq. ft. of floor surface. It is important not to make the coats of wax too heavy . . . two thin coats are superior in both beauty and durability to one heavy coat.

Before buffing, the newly waxed floor must be dry. If it is not dry, the wax will come off on the buffing brush and the result will be a blotched floor. Drying time varies.

Although it is advisable to buff the floor between coats, this is not always practical and good results can be obtained by simply letting one thin coat dry and then applying another thin coat over it. After the second thin coat is thoroughly dry, you are ready to buff with a soft buffing brush.

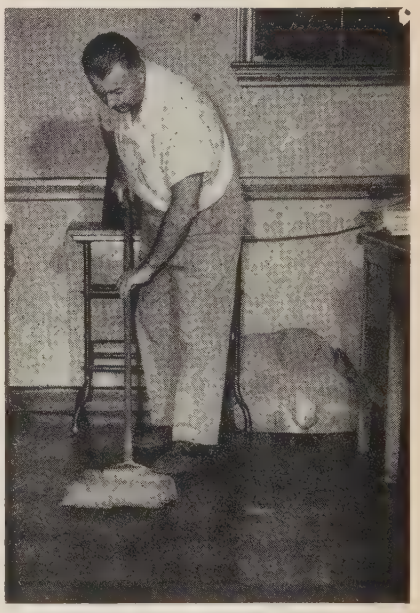
Buffing is a slow operation. You must go over and over the new wax with the buffing brush until the wax film is spread evenly. After buffing, attach a soft felt or lambs wool pad and buff again until swirl marks disappear and floor shines.

Sometimes an area will not need an entire re-waxing. Areas such as hallways, around desks, elevator entrances, aisles, etc., become worn while the surrounding area gets little or no traffic. In such cases the worn area can be re-waxed and the unworn area merely buffed. Scrub, mop and apply new wax only on the bare areas, and "feather it" into the old wax.

Paste wax should never be applied to asphalt, rubber or vinyl tile floors. It is recommended for use on wood, cork and may be used on linoleum if desired. After floors are thoroughly stripped of old wax and rinsed, the paste wax is applied directly to the floor in "blobs" —about the size of the palm of the hand. This "blob" is spread thinly by the electric rotary brush over the area and another blob is dropped on the floor and spread until the whole floor area is covered. To make certain there is no heavy concentration of wax in some sections, the area should be thoroughly buffed before going on to another area. After brush buffing, the felt or lambs wool buffing will bring out a high glossy sheen.

Material by courtesy of the penetone Company.

WAXING



✓ Safety Tools and Training Aids Series next article in January

Sell your employee

AND KEEP

Employees do not become safety-conscious by chance or by directive. Safety has to be "sold" to them. Often, workers insist that safety is just bunk. Although the feeling may be genuine, the reasoning is false.

In developing a safety campaign for a small company, it is worthwhile to plan your program to appeal to your employees' deepest feelings, such as:

1. Will to survive
2. Desire for approval or distinction
3. Fear of ridicule or disapproval
4. Desire for material gain
5. Competitive instinct and group loyalty
6. Desire for leadership
7. Sense of responsibility

Most supervisors and workers can be made safety-minded if they are encouraged to participate jointly in safety activities—to form committees to make responsible investigations of accidents, to conduct tours of safety inspection, or to carry out similar safety projects. By and large, the more employees who take an active part in preventing accidents, the more effective the safety program will be.

What employees who scoff at safety really are saying is that they are not sympathetic to the way management is presenting the idea of safety to them. The problem of selling a safety program to key men and workers is much the same as selling a product to a customer: first attract attention; then gain acceptance; and finally hold interest.

Attracting Attention

Obviously, not every one can be a member of the safety committee. Nevertheless, you can keep the attention of all employees on safety by constant publicity. Here are some specific things you might try:

1. Put "action situations" into your displays; the eye tends to be attracted to movement.

2. Keep graphic presentations large, simple, and closely related to people.

3. Offer dramatic demonstrations; they can be developed to provide a variety of appeals.

4. Publicize interesting safety situations which occur in your own company, safety is a personal concern.

5. Use contrasting colors, bright surfaces, and irregular shapes in your displays; they are eye-catching.

6. Place signs about safety on bulletin boards, over clocks, on mirrors, and in other conspicuous places.

7. At every meeting and conference mention management's interest in safety; the example you set for your employees is important.

Gaining Acceptance and Holding Interest

Gaining acceptance of your safety program requires more than merely publicizing it, however. Good human relations are fundamental to the acceptance of a safety or any other program.

One of the most frequent reasons for lack of support for safety campaigns is that workers and supervisors are not sure that management wholeheartedly backs the program. In this regard, the head of a small business has an advantage over the manager of a big business. He has close personal touch with his people.

Remember too, that new employees need to be informed about the company's stand on safety, and that older employees need constant reminding of the company's interest in their efforts to prevent accidents. In either case, workers, as a rule, like to get the word direct from the "boss."

Interest once gained must be held. Here are some good ways to keep the interest of your supervisors and workers:

1. Hold safety campaigns and contests
2. Conduct safety meetings and safety "stunts" to dramatize important issues
3. Offer first-aid training courses to workers
4. Offer safety training courses to key personnel
5. Form plant fire-fighting units
6. Rotate workers on a safety inspection committee
7. Designate specific supervisors and workers to investigate accidents
8. Give awards for the best safety suggestions
9. Provide outside safety lecturers and motion pictures

A safety "advertisement" can play a valuable part in selling the program. Here are several widely-used

on Safety . . .

THEM

methods of issuing regular statements of company policy, coupled with current safety literature:

1. If your company has a news bulletin, it can include a featured safety section in each issue.
2. Bulletin boards kept up to date with accident prevention information often arouse much interest.
3. A library shelf of safety books and pamphlets prepared by authorities on safe practices often proves popular.
4. Occasional payroll inserts will help to remind employees about safe practices.
5. If you can afford them, letters on timely safety subjects sent to the workers' homes also can be helpful.

Getting the Personal Touch

Intelligent workers often have many questions on accident prevention which have a direct bearing on their own welfare. By providing answers to questions of this type, you can get a "personal" touch into your program. For example, an employee might be glad to know:

1. What steps the company is taking to safeguard him on his job.
2. Why he should get first aid for all injuries, however slight.
3. Why he should not run through work areas no matter how much of a hurry he is in.
4. What precautions he should take during periods of hot weather.
5. Why he should make use of personal protective equipment.
6. How he is to know when a machine is shut down for repairs.
7. What is meant by "housekeeping" and what his part in it is.
8. Where he should send a suggestion for improving company working conditions.

The presentation of this kind of topic can be made particularly appealing and meaningful through posters and special publications. Sound slide-films also will help you to sell safety to your employees, and many good safety motion pictures on a variety of subjects can also be incorporated into your safety program.

Many a company has obtained valuable ideas from its own workers. Suggestion systems sometimes prove to be a gold mine of constructive thinking. At the same time, they can provide an excellent channel for selling safety. Four essentials of such a suggestion:

1. Management must be sincere in asking for safety suggestions from workers.
2. Every suggestion must be considered promptly and a reasonable explanation given as to the way it will be handled.
3. Usually, credit or publicity is desirable, but the identity of the person making the suggestion should be kept completely confidential if he wishes.
4. Rewards for accepted suggestions should be in direct proportion to their value.

Check List

Here are some rules-of-thumb which you may find useful:

1. Impress each person with the advantages—to him—of working safely.
2. See that each employee has some active part in your safety program.
3. Keep an open-minded attitude toward all suggestions from workers in the plant.
4. Remember to give prompt acknowledgment and suitable credit for suggestions received.
5. Insist that all workers understand and follow prescribed safety policies.
6. Be sure that key men thoroughly understand company safety policies and explain them down the line.
7. Have your supervisors show each man how to do his job safely and check his performance. See that everyone understands safety regulations.
8. Periodically put your safety ideas into new forms of employee communications. Keep them before the workers constantly.
9. Keep your eyes open for employees who have creative talents and get such talented people to help you sell safety throughout the company.
10. Set the tone for safety by what you yourself do and say in each day's work.

By courtesy of the Small Business Administratoin, U. S. Dept. of Commerce.

Safety i

Something new under the sun: 3-panel safety glass shield protects researchers developing new reagents in laboratory.

Most essentially "hazardous" industries are in the forefront of the movement to prevent accidents and minimize the effects of possible injury. For that reason, their overall safety record is usually among the highest.

A case in point is the manufacture of reagents which can be fraught with danger; however progressive management of reagent plants has left no stone unturned to cope with dangers and surround employees with every known safeguard.

Reagents are, of course, unknown to the man on the street. Even in the chemical industry itself—a multi-billion-dollar business where chemicals are measured in carloads—reagents comprise only a fraction of production. Yet these materials, consumed in grams and ounces instead of tons, occupy an importance in today's world out of all proportion to their bulk; for they are the ultra-pure, laboratory-analyzed chemicals required by scientists engaged in every sort of activity from research into mothproof textiles and the chemistry of breakfast cereals, to the testing of color TV phosphors, jet plane alloys and Salk polio vaccine, to the making of vital clinical diagnoses. Today, reagents are even beginning to be purchased in bulk drums, for use in **manufacturing** (for example, in the electronics industry, where traces of impurities in ordinary chemicals would endanger the final product).

Historically, safety has always been a problem in reagent work. In the alchemical era, when chemicals were purified by the forerunners of our scientists, who sought to transmute base metals like lead into gold, we know of the endless accidents that marred their work. Many 17th Century paintings and engravings in the Fisher Collection of Alchemical & Historical Pictures bear such titles as "Explosion in the Alchemical Laboratory" and "The Alchemist's Experiment Takes Fire." In distillation, a standard step in reagent purification to this day, and known in the mystical alchemist manuals as "ascension," many an early experimenter forgot to leave an escape passage for expanding gases, with the consequence that reagent, glassware—and occasionally the scientist himself—went skyward.

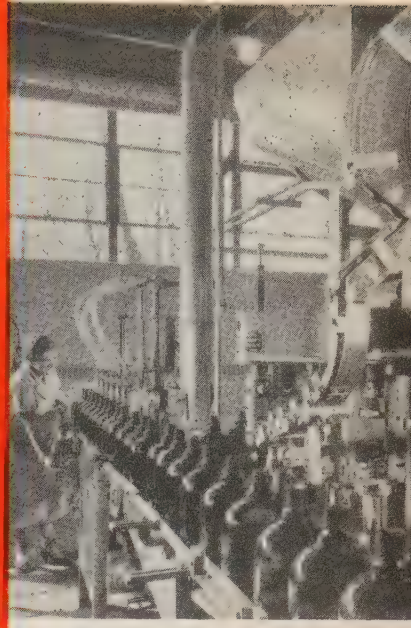
Later, chemists were able to buy some reagents from apothecary shops, but as late as the 19th Century they had to spend much precious time preparing and analyzing their own. By the mid-19th Century, the increased exactness of science and technology made it necessary that chemists be informed and assured of the limits of impurities found in their reagents. One of the turning points in the history of reagents came in the year 1874, when a Fisher division produced a line of reagents with an exact analysis of impurities printed right on each bottle. Each label carried a "lot" number, meaning that the small batch from which the bottle was filled had been analyzed by chemists and recorded. This had never before been attempted with chemicals, and it offered scientists a tangible set of figures (such as "chloride: 0.0001%") that made purity a guaranteeable commodity.

Today, the 81-year-old Fisher tradition of purifying and analyzing small lots of reagents is carried on in a new plant in Fair Lawn Industrial Park, New Jersey, just outside New York City.

From the beginning, safety was "built-in" at the new Fisher plant. For example, all services are color-coded to become part of the reagent worker's memory. All piping in the high-pressure steam system is **yellow;** low-pressure system, **gray;** water, **green;** electricity, **orange;** gas, **black;** sprinkler system, **red.** These pipes and conduits are unmistakable against the walls and ceiling of the manufacturing building. All of the evaporating kettles in this building (evaporating, like filtration, crystallization, centrifugation, distillation, vacuum drying, etc. is a step in reagent production) are surrounded by a literal curtain of air.

the Reagent Plant

by **DR. CLIFFORD A. FLANDERS**
Coordinator
Chemical Manufacturing Division
Fisher Scientific Company



Packaging of the finished products is carried out semi-automatically, in rooms with the temperature, humidity and dust controls heretofore associated only with medicinals. All equipment in the solvent packaging rooms is of the explosion-proof type, and the eye-rest-beige tiled walls have generous window areas hinged at the top to blow **out** instead of in. (Windows are worthwhile even in modern plant design; psychologically, chemical workers are refreshed by the view of trees outside—which, in a way, may be considered a safety element, too.)

Pull-chain emergency safety showers are located throughout the production, packaging and laboratory rooms, as are eye-baths with split-section activation of the water valve. The blowers in the packaging rooms are designed to change the air **every three minutes;** the points where the air is picked up were selected to take care of the sources of the fumes with due consideration being given to the heavier-than-air gases formed.

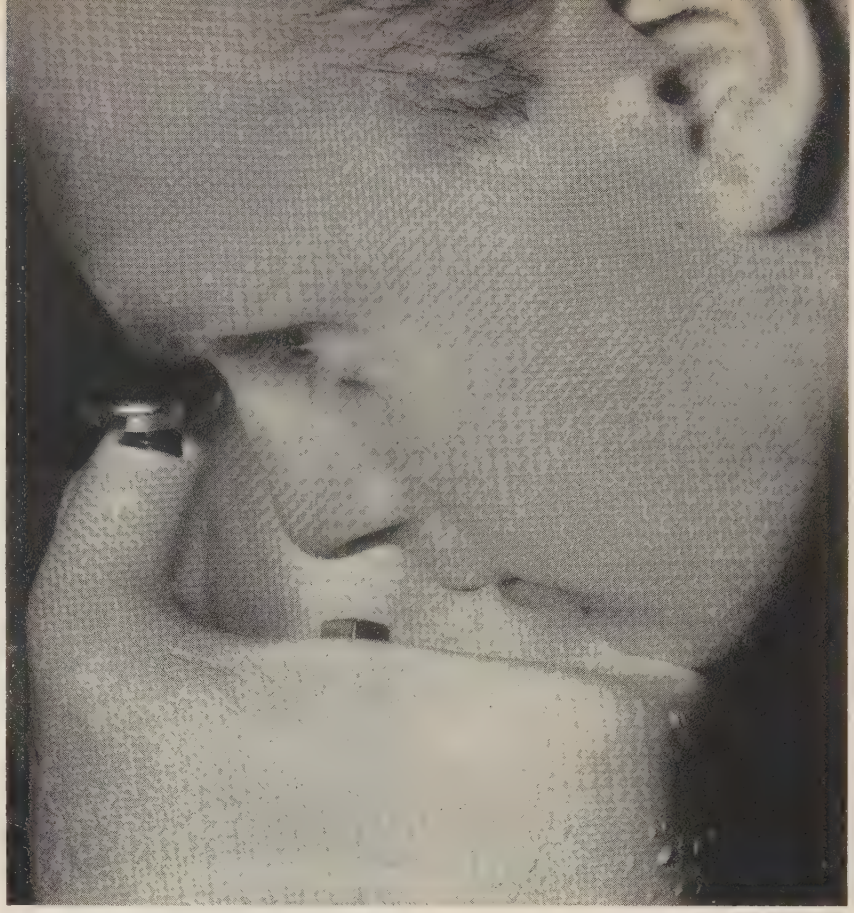
The large number of laboratories is probably what most distinguishes a reagent plant from ordinary chemical plants. One of these—the packaging control lab—checks to see that the reagents meet the latest specifications of the Manufacturing Chemists' Association and the Interstate Commerce

Commission as to toxicity and flammability.

All solvents are furnished in amber bottles with a deep-formed cap over a high-safety **drip-less** pouring spout. The solvents are packaged by volume instead of by weight. That is, in standard pints, quarts and gallons instead of pounds. This may not sound like an earth-shaking change, but actually it marks a major step in reagent convenience and safety. Reason: when packaged by **weight**, reagents must be ordered by the user in a great variety of bottle sizes, for even two bottles of solvent with the **same** weight may require different-size bottles due to the chemicals' differing "specific gravity." This makes for the non-uniform, cluttered storing of chemicals that is one cause of stockroom accidents. Packaging all solvents by **volume** makes for absolutely uniform, neat, and hence safe stockrooms.

For hydrofluoric acid, buffer solutions and concentrated bases, polyethylene bottles are used. Another safety measure is the development of "Gram-pacs," which Fisher packagers use for small quantities of reagents. These ingenious items are actually envelopes (one layer of polyethylene, one of aluminum foil, one of acetate) which hold a small quantity of reagent and which are disposable.

Still another safety item is the packaging of many solvents in 4-gallon lots. Each one-gallon bottle has **its own** ICC-regulation carton, with all four cartons fitting snugly inside a large ICC-regulation carton. Result: you need remove only the bottle you currently require,

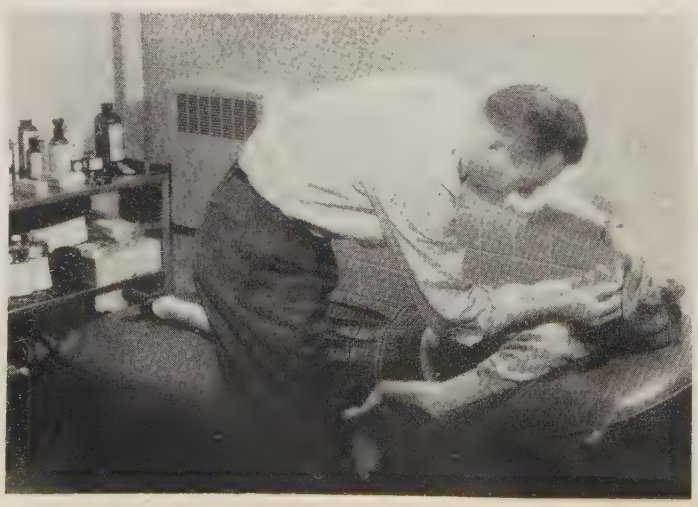


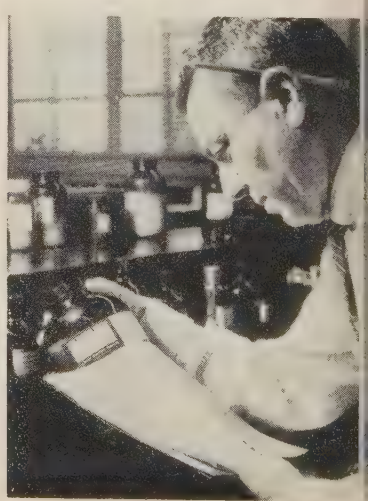
and store the others, inside their original cartons, in the stockroom.

Even while the present plant was going up, a safety committee was being planned by the staff. It includes three chemists trained to render first-aid regardless of the injury, and a fully-equipped first-aid room. Severity of an accident determines whether the case is sent to the hospital, and an emergency driver is on call at all times. We regard an active safety committee, as outlined in "A Check List for Laboratory Safety," SAFETY MAINTENANCE & PRODUCTION (February 1952), a must for any reagent set-up.

To be sure, the major safety factor at the new plant is a very old one: cleanliness. From the simple, functional stainless-steel facade of the building to the all-rubber "scrubbing towers" in the manufacturing building (which insures that only clean air leaves the plant) to the white Teflon-lined tubing of the filling machines, everything has been designed to reinforce the "good housekeeping" that is essential in a plant where specifications for, say, a certain reagent for atomic-energy researchers call for no more than one part per **billion** of a certain impurity.

Pictures by courtesy of Fisher Scientific Co.





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If you don't have the Payroll Savings Plan, and are wondering whether your people would like to receive their bonus in Bonds, here are a few significant facts:

—every month, *before they get their pay checks* or *envelopes*—8,500,000 men and women enrolled in the Payroll Savings Plan invest $160,000,000 in U. S. Savings Bonds.

—Payroll Savers hold their Bonds: From May 1, 1951, to September 30, 1955, approximately $18.7 billion E Bonds reached 10-year maturity dates. On September 30, 1955, approximately 70.3% of the matured bonds were retained by their owners under the automatic extension plan. With additional interest earned since maturity dates ($560 million), cash value of the matured bonds held by individuals amounts to approximately $13.7 billion.

—on September 30, 1955, the cash value of Series E and H Bonds—the kind sold only to individuals—totaled 39.7 billion dollars, a new high.

To the Payroll Saver, and to the man who buys his Bonds at a bank (because his company does not provide the Payroll Savings Plan) a One Hundred Dollar Savings Bond looks bigger and better and *is* bigger and better, than a check for $75. *Make this a merrier Christmas for every employee. Give the gift that keeps on giving.*

The United States Government does not pay for this advertising. The Treasury Department thanks, for their patriotic donation, the Advertising Council and

Safety Maintenance

SUCCESSFUL SAFETY SELLING

A snug-fitting respirator protects worker as he blows out electric motor with compressed air.

Sound selling has established safety as a basic rule of work at the Atlantic Steel Company plant in Atlanta, Georgia. Company management wisely avoided the hazard of thrusting safety on employes as a "must" method of operating. Instead, constant advertising and promotion have been used to put the program across.

Quality safety equipment facilitated the job, and the combination has worked so well that C. J. Vandeventer, safety director, recently remarked:

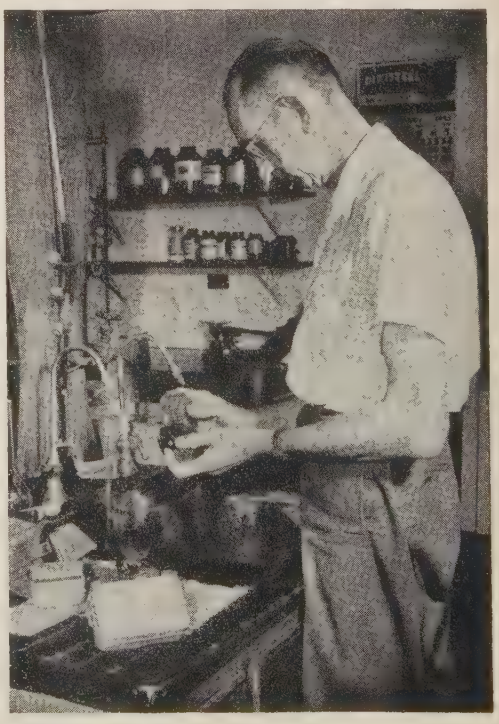
"When our employes began asking voluntarily for respirators and other safety equipment, we knew our program had arrived. It is genuinely the employes' program now, not the company's."

The program was the brain child of R. S. Lynch, president of Atlantic Steel, and J. H. Girdler, vice-president, who set it in motion after a conversation about safety over a cup of coffee one morning back in 1945. Since then the company has slashed the frequency and severity of accidents by more than 75 percent and has achieved one of the most notable safety records in the nation.

The Accident Prevention Committee, known as APC to plant personnel, consists of supervisors, foremen, and union representatives. All share responsibility for the safety of the company's 2 thousand employes.

Atlantic's four furnaces have a capacity of 300 thousand tons of steel a year and its finishing mills convert the steel into bars, shapes, strips, cotton ties, nails, wire, bale ties, barbed wire, woven wire fence, rivets, welding rods, metal forgings and stampings, and other products.

(Continued on page 60)



Assistant safety director cleans his respirator in the picture above, an easy operation.

(Continued from page 13)

many new and remarkable additions to safety's arsenal at the concurrent safety equipment exposition; and, they gathered much new information on specific aspects of safety at industry meetings and panels; but, they seemed to show the most interest in themes that illustrated the stature of safety as a force for man's good.

Citing the greatest danger today as the threat to our freedom and the American way of life, Frank V. Martinek, chairman of the plant protection committee of the Chicago Civil Defense Corps, pointed out that plant security and safety go hand in hand.

Said Mr. Martinek, "the United States is only half safe unless we have a planned security program every bit as good as our safety programs. The safety of a plant does not mean merely care exercised in accident prevention. It includes as well the protection of top secret or confidential material and work or equipment of all kinds."

Declared Major General Paul F. Yount, Army chief of transportation, speaking at the opening session of the Congress, "When combat ceases, battle casualties stop. However, accidents continue to deplete our ranks like a fifth column in our midst."

He noted that during World War II the Army, for the first time in its history, reported more deaths due to accidents than to disease. In 1952, while the Korean conflict was in progress, for every 10 deaths from battle there were 4 from motor vehicle accidents. Each death, whether from combat or accident, brought a sad message to the next-of-kin.

"The pain of such a message may be somewhat softened if the soldier dies in defense of our nation, for such death has heroic purpose," Gen. Yount said, "but there is no lessening the anguish if the life of our youth is claimed by accident. Such death is despairingly purposeless."

Urging the nation to join in an intensified crusade against irresponsibility, incompetence and indifference, Ned H. Dearborn, National Safety Council president, said that, "When presented as a social and moral cause, instead of as a matter of purely individual expediency, the safety movement may reasonably expect to enlist the cooperation of countless forces that have remained apathetic in the past."

"Be Your Brother's Keeper—Stop Accidents," this year's Congress theme, summarizes the new concept of social responsibility in safety, says Mr. Dearborn. To make safety campaigns effective, he feels it is necessary to convince the average person of 6 things:

1. That his safety depends only partly on his own behavior and partly on the behavior of others.
2. That the safety of others depends partly on their behavior and partly on his.
3. That he cannot be careless without endangering others, and they cannot be careless without endangering him.
4. That he has a responsibility to others for behaving safely, and that others have the same responsibility to him.
5. That his safety and the safety of his family and friends depend upon many factors beyond his or their control, and the safety of other persons and of their families and friends depends upon many factors beyond their control.
6. That the main purpose of organized safety work and of safety regulations is to keep him from hurting others, and others from hurting him, rather than to protect each from his own actions.

Safety and the Human Being

The concept of the human and moral purposes of safety showed up in other reports to the Congress. Here are some examples:

Ordinary safety rules won't prevent accidents because they fail to stress the basic laws of nature, explained Dr. Robert H. Kotte, a pediatrician from Cincinnati, Ohio.

Stress that accidents are a violation of the laws of nature—laws that are older than the caveman. Learn well the few laws of nature; don't try to memorize all the safe procedures to guard against all the hazards that exist today. For example a basic law of nature is that heat burns. "These two words, a noun and a verb, are effective. Their implication is the same to a holder of a Ph.D. degree or a 15-month-old child who has just touched a heater. They are more forceful than such advice as 'When you light the heater, do you follow the manufacturer's instructions carefully?' "

The prevention of accidents, according to Dr. Kotte, does not lie in a memorized set of rules but in the basic motivations of humans. In the example of the child touching the heater, the cause was not the touching but the "result of the motivation within her brain that forced her to disregard the hazard of a hot heater."

"Why does a person resist safety when he has everything to gain and nothing to lose by it?" asked H. T. Mullin, assistant director of business management at Chrysler Corp., at another session of the Congress.

Said Mr. Mullin:

"1. He will not look far beyond his own self-interest.
2. He resents change and dislikes movement.
3. He forgets the past and remembers inaccurately.
4. He won't fight for things when he can find something to fight against.
5. He does not differ from the crowd unless certain of his differences will be recognized as superior.
6. Except in periods of high emotion, he will not exert himself beyond the line of least resistance.
7. He will not act even in important matters unless his performance is checked.
8. People resent being told what to do.

"Most every human being is guilty of a natural complacency from which he must be aroused before he will act constructively in his own best interests," Mr. Mullin concluded.

W. A. Eggert, chief psychologist of a leading insurance company reported elsewhere that, "Psychologically, the best results are obtained through private reprimand or public commendation of people. The worst results follow from the use of sarcasm either privately or in public."

Praise brought about an improvement in 91 percent of the cases studied in a recent psycho-

logical experiment, and worse results in only 1 percent. Public reprimand using sarcasm, on the other hand, resulted in worse production in 77 percent of the cases and improvement in only 10 percent. Private reprimand using sarcasm gave similarly adverse results—65 percent of the cases resulted in less work and only 18 percent showed any improvement.

Human Safety Problems

Humans must be "maintained" just as machines are to keep up their efficiency on the job, claimed Charles A. Richardson, vice president, marine and heavy construction department of Merritt-Chapman & Scott Corp. His company maintains a fully equipped, air-conditioned, mobile hospital unit on all major projects, said Mr. Richardson. In addition to treatment, the plan permits better job placement and accident analysis.

"We have found that a healthy workman is more efficient and less prone to have an accident than one who is not feeling well."

The $64,000 question is how to make safety compete with "The $64,000 Question," said O. M. Cutright, production foreman of the Union Producing Co.

"Human nature being what it is, meetings must be interesting and attractive enough to compete with modern diversions such as ball games, TV, picture shows, fishing and all other phases of the average community life," continued Mr. Cutright.

He pointed out the success of any meeting depends on the leader, and the subject material must be built around subjects common to the average worker.

Sell safety like autos . . . with a new model every year, advised E. R. Estus, superintendent of safety and training at the Cities Service Oil Co.

"Safety programs, like automobiles, need new features to maintain their appeal. Every program needs a little chrome for eye appeal."

Mr. Estus described how his company's safety program got a big lift from a year-long campaign with the theme, "Hitch Your Wagon to a Star."

R. L. Larsen, production foreman of the Casper division of the Ohio Oil Co., explained that suggestions are received orally at safety meetings and by written report directly from workers in his company. Both become a matter of record and must be corrected at the earliest opportunity, he said.

"These reports are made clear and concise and are followed through so that a hazard does not extend for any length of time," said Mr. Larsen.

H. Mabson, chief inspector of the Industrial Accident Prevention Associations, of Toronto, Ont., told a session of the Congress that safety guards are neglected in many factories until the grapevine warns that the inspector is coming. He urged that a constructive attitude be taken toward inspections. Problems should be put before the inspector who may very well have a solution, he pointed out.

Top management's attitude toward accident prevention has changed, disclosed A. A. Porter, vice president of the American Bridge division of United States Steel Corp. The attitude now is to view accident prevention as a business tool, according to Mr. Porter. By cutting costs through lower insurance rates and reduced accident costs, a good safety record can improve a company's competitive position. In addition, safety is also good public relations, he pointed out, which helps ease personnel recruiting problems. He urged all executives to do something about this new business tool.

Lee B. Johnson, chief safety engineer of Northrop Aircraft, Inc., complemented Mr. Porter's talk with his speech.

A good safety record can be interpreted in dollars and cents and become a part of a company's assets on a financial report, he said. The first step is to set up workable bases for computing costs of accidents. Every effort should be made to obtain actual rather than estimated costs for these records. The next step is to compile cost data into comprehensive reports on a monthly basis. These should be tailored to three levels: management, foremen and supervisors, and shop and office personnel. As an added service, said Mr. Johnson, each of these can be projected as a forecast of what the total injury cost will be for the full year.

A mathematical formula is used by the Corps of Engineers to evaluate progress of its safety program, reported Robert L. Jenkins, chief of the health and safety division.

The objective of the method, which he called "progress indicator," is to tell the chief of engineers whether the performance of the safety program is better or worse. It resolves accident report data into a formula, and each element such as property damage, reason for cause of accident and command deficiency is given a numerical value.

"This method is not intended to replace systems for computing injury and accident rates but is rather a means of adding them all together in a systematic fashion," Mr. Jenkins explained.

In what amounts almost to a summary of the things some of the speakers we have been quoting were talking about, George W. Harper, associate professor in mechanical engineering at the University of Illinois, listed seven elements for success in an industrial safety program:

1. Top management must take an active, responsible part.
2. Leadership must have some individual in charge.
3. Engineering must maintain safe working conditions.
4. Safe practices must be established through training of supervisors and employees.
5. An accident record system must be kept to evaluate and measure progress in safety.
6. A system of medical placement examinations must be established as well as first aid for treatment of injuries.
7. Safety promotional activities should be used to promote acceptance of the safety program and a feeling of personal responsibility in employees.

Safety and the Atom

Atomic energy is slowly but surely coming of age as an industrial force. That was evidenced when D. F. Hayes, safety chief of the Atomic Energy Commission, spoke to the Congress about some of the safety hazards already confronting the infant nuclear business.

(Continued on page 28)

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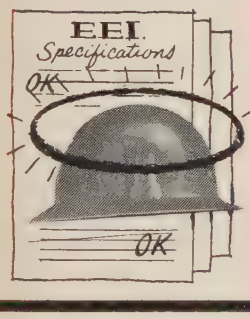
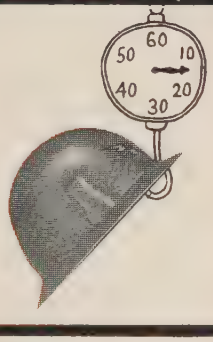
NEW—IMPROVED

offering these important protective features



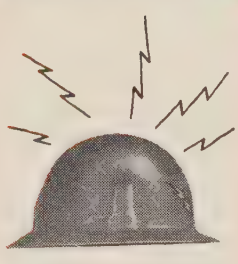
Meets all E.E.I. Specifications

Checked and approved under Edison Electric Institute Schedule No. AP-1, 1954.



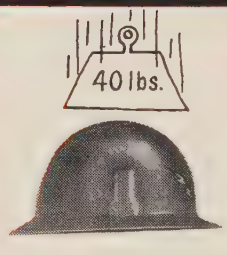
Weighs less than 15 ounces

Real comfort and balance that encourages full-time hat use and reduces job fatigue.



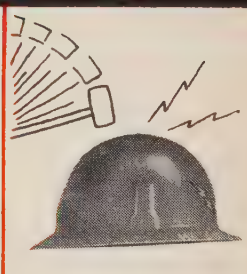
Dielectrically tested at 15,000 volts

Shockgard withstands one-minute dielectric test with no more than 8.0 milliamps leakage.



Withstands 40 foot lb. impact

One-piece, high-pressure molded thermoplastic copolymer shell takes impact without shattering.



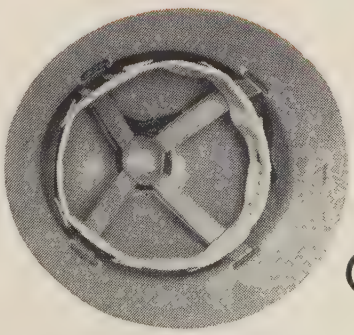
Retains dielectric strength after impact

After 40 foot lb. impact test, the Shockgard still maintains its full dielectric resistance.

There's no question that this M-S-A Shockgard passes every protective test in the books—but that's only half the story. Equally important is the M-S-A *hat-by-hat* testing program that makes sure every Shockgard sold *maintains* the high safety factor specifications. This testing program is not a matter of "batch" approval, or control sampling. *Each and every* Shockgard is examined and tested. And we can uphold this rigid standard because our complete manufacturing facilities are under one roof—from material preparation to packaging and shipping.

The new Shockgard is available in yellow or grey. There is no metal in any part of the hat. The snap-in suspension is easily adjusted, quickly replaced, and eliminates pressure points.

Write for complete details on this important M-S-A contribution.



Leather or leatherette sweatband; space between suspension and shell assures good ventilation. Winter liner and chin strap available.

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M·S·A
SAFETY EQUIPMENT HEADQUARTERS

Call the M-S-A man on your every safety problem . . . his job is to help you

(For details, use Key # M-9 on card on page 71)

The addition of ionizing radiation as a new, common industrial hazard calls for new safety standards, he pointed out. However, these will be hard to come by, since the industry is operating at relatively low levels. Accumulation of working and medical experience is therefore going to be slow.

"A second important problem will be to educate people in practical work with radiation hazards so that the business can proceed without hindrance due to fear, misunderstanding and lack of skill," Mr. Hayes said.

The atomic energy business will also create new problems in materials handling, according to the speaker. Some metals necessary in nuclear fission have dangerous inherent characteristics, he pointed out, while others become dangerous in this high-energy application. Even simple storage problems are magnified because uranium, the principal fuel, is the heaviest element known to man.

Transporting, processing and storing of fissionable materials will lead to added responsibilities for accident prevention, Mr. Hayes continued. Precautions will have to be established to prevent the materials being thrown into uncontrollable conditions while away from the plant.

"In establishing nuclear safety restrictions, it must be borne in mind that the easy way out—to allow over-generous margins of safety—can add enormously to the expense of operations."

Radiation may also prove to be a great boon to mankind in the future. This was pointed out by Bernard Manowitz, of the Brookhaven National Laboratory.

He pointed out that about 5 percent of the total power generated in today's reactors is given off in the form of radiation. This is wasted now because it is absorbed in the huge concrete shields surrounding reactors now in use, he said. Reactors of the future, however, can easily be designed to take advantage of the extraction of radiation power.

The main problem lies, said Mr. Manowitz, in the handling of the beta and gamma rays which constitute radiation. Both are harmful to man. One watt of exposure could kill in less than an hour.

"Basically, we must learn to live with the atom while we use it and keep it from harming us, just as we have learned to live with fire," he concluded.

Teaching—The Human Side of Safety

Did you ever catch a dingleberry? Did you know peroxide bleaching can be dangerous? Do you believe in painting haystacks?

Well, these strange questions that various industries face every day, were answered at the Congress.

Delegates learned that dingleberries don't grow on bushes, but are flying particles of hot ferrous metal that fall in welders' ears . . . that peroxide bleaching is a hazard in the paper industry . . . and that painting haystacks pertains to whether poor workers should be paid the same amount as good workers just because their salary needs are the same.

They also heard about schooling in different industries for safety and efficiency's sake.

A strong back may still be an asset in the furniture moving business, but now you need a "college diploma," too. C. W. Hulett, assistant operations manager of Aero Mayflower Transit Co., described how personnel is selected and trained to do a better job. He said the prime traits looked for are driving ability and personality characteristics acceptable to the average homemaker. In addition, men have to pass intelligence and physical tests before they qualify for training.

After three days of actual highway driving under predetermined conditions, the driver is sent to a moving school. The "laboratory" consists of a 2-story house with all kinds of furniture. Even a baby grand piano has been placed on the second floor to duplicate conditions likely to be met on actual jobs.

A model "Farm of Hazards" is showing Illinois farmers how to prevent costly fires. Ward Cross of the Illinois Agricultural Association described it as a model set of farm buildings equipped with lights to denote fire and explosion hazard points. A fire prevention lecture goes along with the demonstration.

The display was built and is being shown by a leading insurance company before meetings of student and adult groups throughout the state.

You can actually smell danger in a chemical plant—that is, if you have been trained properly. So said Jack T. Garrett, industrial hygienist of the Monsanto Chemical Co.

Workers must be carefully instructed about the hazards of the product they're handling—even recognition of compounds by smell. The worker also should know the symptoms of exposure and proper first aid, escape routes from the operating area, the location and proper use of all emergency protective equipment and proper fire fighting techniques.

"The most important step in the process of manufacturing a possibly hazardous compound is instructing workers correctly," Mr. Garrett said.

Ideas—and Human Safety

Can 110 volts, the ordinary house current, kill you? The answer: it can and does.

D. Lydy, safety engineer of Goodrich-Gulf Chemicals, Inc., said, "The facts as we have them reveal that 110 volts can and does kill many hundreds of workers each year."

He explained that from 50 to 90 milliamperes can kill humans. At 110 volts, he pointed out, a 100-watt light bulb pulls 900 milliamperes of current. Even a 5-watt light bulb uses 50 milliamperes, he said. Therefore, the current used by these comparatively small and common bulbs is sufficient to kill.

Some safety advantages for electric controls for printing presses and cutters were outlined by F. N. Burt, manager of the safety controls department, Micro-Switch division of Minneapolis Honeywell Co. He said an electric signal light now shows the operator when he can release his hand switches. In addition, the machine can be operated only when proper and positive action is taken. In other words, the cutter will not operate under abnormal conditions such as broken or shorted wires, stuck relays or

switches tied down, he pointed out.

A kind of mechanized system of making mud pies is helping to lick a problem inherent in modern, high-speed coal mining according to Wayne D. Snell, assistant director of mine inspection in the coal operating division of United States Steel Corp.

He said one of the problems of mechanical, continuous coal mining is that dry rock dust, used to reduce the explosive characteristics of coal dust in mines, interferes with the visibility of men working on the return side of the air current. Therefore, a method has been worked out which involves mixing dry dust and water in a nozzle and applying it on ribs and roof in a soupy form.

L. J. Markwardt, assistant director of the U. S. Department of Agriculture's Forest Products Laboratory, told how a coat of paint on a ladder can hide defects that might later result in an accident.

"Wood ladders, except for certain specialty types, are sold in an unpainted or unfinished condition. In this condition the ladder parts can readily be checked for cross grain, compression failures and quality of wood. A transparent finish such as varnish, shellac or clear preservative is recommended. With such finishes the ladder can be inspected from time to time as readily as if left unfinished."

Mr. Markwardt listed some do's and don'ts for proper ladder use:

1. Select the proper type of ladder for the job.
2. Place the ladder properly to reach the desired height. Distance from base of ladder to wall should be one fourth the length of the ladder.
3. Make sure the feet of ladder are firmly supported.
4. Always face the ladder when ascending or descending.
5. Whenever possible, use both hands in climbing.
6. Do not hurry when going up or down a ladder.
7. Be careful not to lean too far over to one side.
8. Do not overload the ladder.
9. Do not abuse a ladder by letting it fall.
10. Inspect ladders periodically after service use.

Thomas R. Donoghue, safety manager of the Pittsburgh Plate Glass Co., Pittsburgh, Pa., defined "color dynamics" as "the correct use of the energy in color." He said the principles of color dynamics have long been used in decorating hospital rooms, hotels and offices to stimulate desired reactions on patients, patrons and employees. The science is now spreading into industrial applications, with good results.

Mr. Donoghue cited the experience of a large steel plant where color dynamics was gradually applied in repainting the buildings and equipment. Over a 3-year period, records revealed the following improvements, he said:

1. Number of lost-time accidents was reduced by 38 percent.
2. Improved employee morale resulted in a reduction of absenteeism from approximately 5 percent to less than 2 percent. Labor turnover was reduced from 4.5 percent to 0.4 percent.
3. Production efficiency increased

(Continued third column next page)

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"Respirators for Industry since 1894"

(For details, use Key # M-10 on card on page 71)

Safety Maintenance SALUTES

A SAFETY IDEA

New Atomic Ray Detector

A new wide-angle atomic ray detector developed by General Electric Company scientists at the Hanford Atomic Products Operation is used to monitor radioactive material being removed from flat-bed truck with caustic steam.

The new device overcomes disadvantages of conventional detectors by reacting equally to atomic rays coming from various directions. On older detectors rays coming directly at reactor registered better than those coming at an angle, thus necessitating safety factor in computing time workers could spend in a radioactive area.

Since the added safety factor cut down permissible working time for individuals in a given area, the new detector has expedited production at Hanford by increasing working time that individuals can remain on job, according to Dr. H. M. Parker, director of the G-E radiological sciences department.

The new instrument was developed by Dr. E. E. Donaldson and Dr. C. C. Gamertsfelder, both G-E scientists. Hanford is operated by the General Electric Company for the Atomic Energy Commission.

from 86 percent in the first year of the color program to 96 percent in the last.

For chemical workers doing maintenance work involving welding and vessel entry, Donald J. Brady, safety technician of the Dow Chemical Co., listed various safety devices.

Airmovers, for instance, should be used to remove vapors from vessels to assure a fresh atmosphere before and during work, he said. He also mentioned safety belts, strong leather harnesses fitting under a man's arms and around his chest. In the event of trouble, fellow workmen can remove a man from the vessel by pulling on the rope attached to this harness without subjecting themselves to the same hazard.

A safer way to get gas out of petroleum storage tanks was described by V. E. Bradley, safety director of a Shell Oil Co. refinery.

It's faster by as much as 22 hours over steam purging and less steam is consumed. It's safer, too, because no time-lag is necessary to allow the tank to cool, and the explosive mixture hazard is greatly reduced. It requires no personal attention once purging commences. The method he described makes use of fog nozzles to wet down residue in the tank as vapors are removed through an eductor.

Heart Film

Great public interest in the strides medicine is making toward finding the cause and cure of heart disease is evidenced from the large number of requests Association Films has received for the color documentary film, "A Matter of Time," presented by the Institute of Life Insurance for the Life Insurance Medical Research Fund. The 15-minute color documentary on heart research is available for free-loan to community groups.

Prints may be borrowed by local community organizations and television stations at no charge except return postage from Association Films' regional film exchanges in: Ridgefield, N. J. (Broad at Elm); La Grange, Ill. (561 Hillgrove Avenue); Dallas (1108 Jackson Street); and San Francisco (351 Turk St.).

EDISON L. WHEELER

ON OCTOBER 31, Edison L. Wheeler died as a result of a fatal heart attack. Mr. Wheeler, Founder and President of Wheeler Protective Apparel, Inc., for the past forty years, has been outstanding in the safety field. He was President of the Industrial Safety Equipment Association, and served on the Board of Directors of the National Safety Council. He was also a member of the Veterans of Safety.

The company was started by his father, Fred H. Wheeler, as a Partnership in 1911. In 1948, the company name was changed to Wheeler Protective Apparel, Inc.

Mr. Wheeler was widely known for his skill as a landscape architect. He studied with his father-in-law, the late Jens Jensen. The work of Mr. Wheeler and Mr. Jensen has beautified many suburban Chicago residences. Through his appreciation for naturalistic beauty, he became active in Friends of our Native Landscape, serving as Secretary.

For years, Ed. Wheeler was a colorful personality in the safety industry. The equipment he designed has saved many countless workers from injury and death. His knowledge and experience have enriched the organizations of which he has been a member. His pioneering work helped found an industry that is growing and will continue to grow as long as industrial hazards exist. It can be truly said that the death of E. L. Wheeler signals the passing of an era.

Pennsylvania Program for Foreman Training

Foremen in scores of manufacturing industries throughout Pennsylvania are going "back to school" this year to learn how to prevent on-the-job accidents and make the factory a safer work place.

One thousand foremen are enrolled in industrial safety courses sponsored by the Pennsylvania Manufacturers' Association in cooperation with member companies. Slide films have been substituted for textbooks. Classes are held regularly in plants in many parts of the state.

Purpose of the basic course, held in ten monthly classes, is to help foremen analyze accident causes, start a safety program, hold meetings and departmental inspections, learn first-aid methods and "good housekeeping." Advantages of protective equipment and apparel for workers are stressed, and posters and awards recommended to spur interest in safety.

Follow-Up Course

In a follow-up course of six monthly classes on "human factors in safety" foremen are taught to apply their leadership abilities to the task of accident prevention. The course is also intended to help foremen learn, directly from each other, more about modern safety practices.

The advanced course is designed to assist foremen to enlist workers in the safety philosophy, build employee morale, and provide tips for encouraging new employees to work safely.

Each discussion period is prefaced by the showing of a film which stresses the role of the foreman as key man in safety educational work. Foremen are encouraged to join in the question-and-answer group discussion.

Enrollment

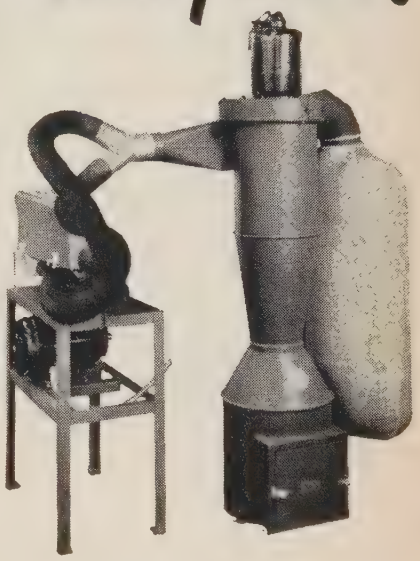
Although the average manufacturing concern enrolls 15 foremen, some firms have had as many as 150 supervisors attend classes.

A number of companies enrolled in the foremen training program have become eligible for safety awards given by the Pennsylvania Manufacturers' Association to member firms which carry on outstanding, year-round programs to improve their safety performance.

An attractive walnut and stainless steel plaque is awarded to PMA member companies with a record of 1,000,000 continuous man hours of production without a disabling accident. Certificates of merit are given to member concerns with 200,000 or more accident-free man hours.

TORIT
DUST COLLECTORS

Really draw!



A size and model to solve any dust collecting problem, Torit collectors provide complete, all-around dust control. Torit collectors are unitized for custom installation on each machine, giving power and suction only when machine is operating. Keeps plant and machines free from clogging and unsightly dust. Furthermore, cleaned and filtered air is exhausted back *into* the room maintaining heat balance. Find out now how Torit unitized dust control is engineered to your problems.

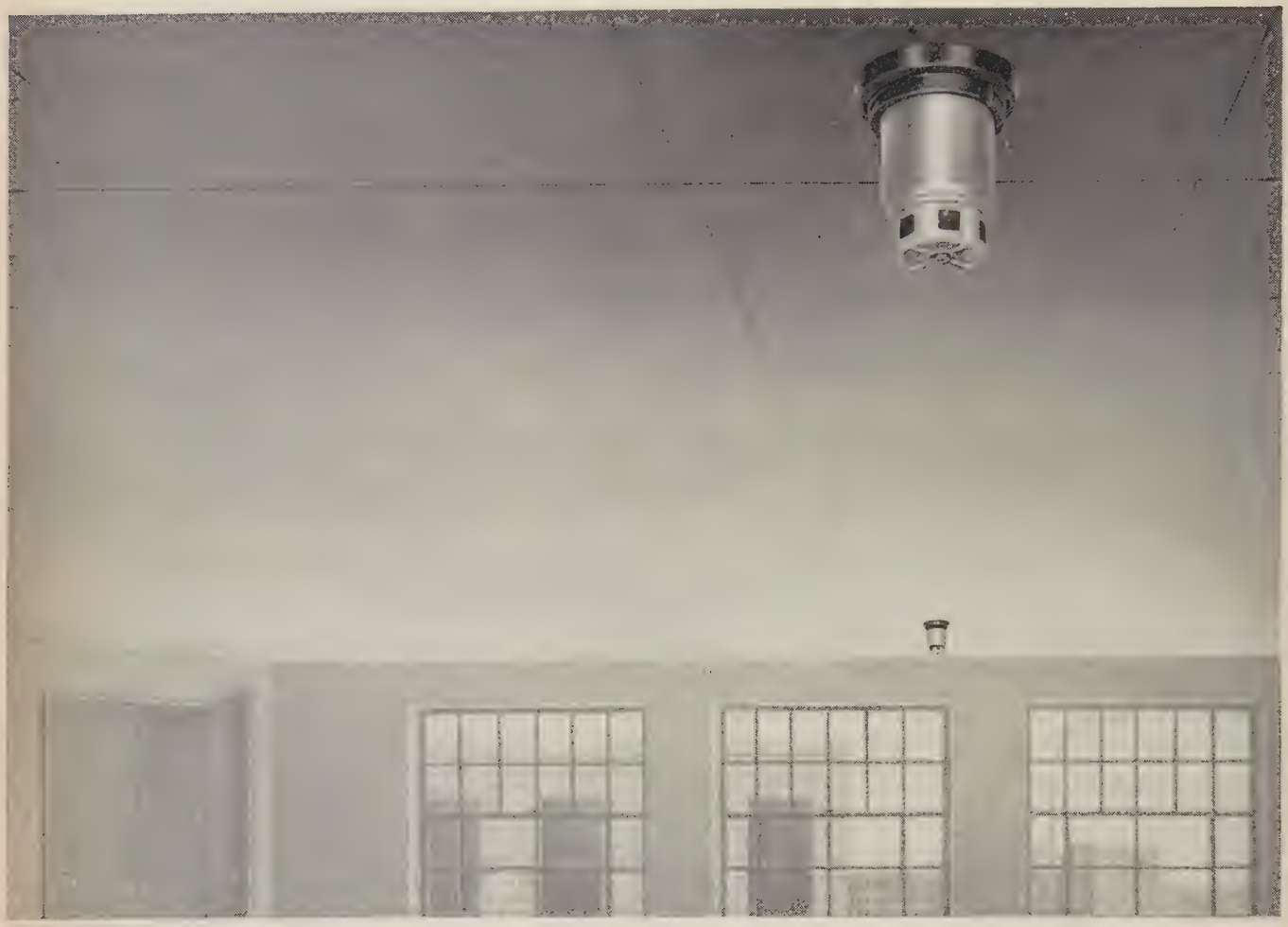
See our catalog in Sweet's Machine Tool File, or write:

TORIT
MANUFACTURING CO.
304 Walnut Street • St. Paul 2, Minn.

(Use Key # M-11 on Inquiry Card on page 71)

New, radio-active, automatic fire guard!

C-O-TWO PRE-DETECTOR SYSTEM



Each pre-detector head protects up to 3,600 square feet of area . . . harmless radio-active element utilizing ionization chamber principle quickly detects all forms of fire . . . requires only simple two-wire circuit and insignificant wall space for controls.

This completely new and positive means of spotting fire is just what you've always needed and wanted . . . detects in the earliest stage, invisible combustion gases, visible smoke, slow smoldering, as well as open flame. The C-O-TWO Pre-Detector System is simple to install, extremely economical to maintain and doesn't depend on thick smoke or heat for actuation.

As many pre-detector heads as necessary can be connected together in a single circuit and up to 16 separate circuits or spaces handled by one system. With a single circuit the pre-detector heads are connected directly to the fire indicating cabinet, while with multiple circuits the pre-detector heads are first connected to one or more space indicating cabinets capable of visually showing by number the exact location of the fire. Relays perform such functions as sounding alarms, closing fire doors, shutting down ventilation and releasing fire extinguishing systems.

The C-O-TWO Pre-Detector System has been subjected to extensive testing and carries Underwriters' Laboratories, Inc. listing, as well as Factory Mutual Laboratories approval. Proven pilot installations have been made in such diversified properties as a television station, an electric power company network analyzer room, a railroad signal tower, an airline flight training equipment room and the offices of an insurance company.

Don't take unnecessary chances any longer . . . the extensive fire protection experience of PYRENE—C-O-TWO over the years is at your disposal without obligation. Get complete facts about this new C-O-TWO Pre-Detector System today!

Pyrene

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C-O-TWO

COMPLETE FIRE PROTECTION

portable fire extinguishers . . . built-in fire detecting and fire extinguishing systems

CARBON DIOXIDE • DRY CHEMICAL • VAPORIZING LIQUID • SODA-ACID • WATER • CHEMICAL FOAM • AIR FOAM

(For details, use Key # M-12 on card on page 71)

THE FIRE FRONT

Direct Losses Down

The nation's fire losses in 1954 showed a decrease for the first time in five years, the National Fire Protection Association has announced. It estimates the total United States fire loss for 1954 to be $1,016,915,000, a decrease of approximately $5,000,000 from the previous year's total.

The 1954 total is the direct dollar loss which resulted from approximately 1,993,300 fires of all types. Without attempting to estimate the year's indirect losses, it is believed they would amount to several billions more than the direct loss figure.

In a further breakdown, the NFPA has estimated the damage of last year's 774,600 building fires at $875,450,000. An additional 1,218,700 fires not involving buildings—aircraft, motor vehicles, forest, ships, rubbish, grass fires, etc.—accounted for an estimated $141,465,000 loss. While the number of building fires increased by 47,600 over 1953 figures, the dollar loss decreased 1.5 percent. During 1954 there were 450,000 home fires, 38,200 manufacturing fires, 82,900 mercantile fires, 5,300 fires in schools and colleges, 4,300 church fires, and a total of 126,800 fires distributed among such classifications as farm buildings, garages, piers, power plants, lumber and coal yards and other miscellaneous structures.

The three leading causes of last year's building fires, of 22 causes tabulated by the NFPA, were: smoking and matches (121,300 fires —$65,400,000 loss); electrical (94,100—$95,400,000); and defective or overheated cooking and heating equipment (91,100—$82,050,000).

Other major causes included: rubbish, ignition unknown (56,600 —$12,500,000); lightning (43,200—$43,600,000; flammable liquids (42,700—$37,160,000); defective or overheated chimneys and flues (33,600—$24,600,000); children and matches (27,100—$13,900,000); and open lights, flames, and sparks (24,600—$17,350,000).

September Fire Losses

Estimated fire losses in the United States during September amounted to $65,970,000, the National Board of Fire Underwriters has reported. This loss represents an increase of 2.9 percent over losses of $64,087,000 reported for September, 1954, and a decrease of 7.2 percent from losses of $71,103,000 for August (1955).

Losses for the first nine months of 1955 now total $668,444,000 an increase of 0.1 percent over the first nine months of 1954. These estimated losses include an allowance for uninsured and unreported losses.

Three Fire Standards

Three revised fire safety standards applying to outside protection, the organization, training and equipment of private fire brigades, and specifications for fire hydrants for private fire service have been published by the National Fire Protection Association. Each of the standards is now available in pamphlet form from the NFPA, 60 Batterymarch St., Boston. They are also included in the 1955 edition of the National Fire Codes, published in September.

The standards, by numerical designation, title and price, are: #27—"Suggestions for the Organization, Training and Equipment of Private Fire Brigades"—thirty-five cents; #24—"Standards for Outside Protection" — thirty-five cents; #29C—"Standard Specifications—Fire Hydrants for Private Fire Service"—twenty-five cents.

Standards of Interest to Fire Departments

One new and two revised fire safety standards applying to water spray systems for fire protection, specifications for motor fire apparatus, and aerial ladder testing (new) have been published by the National Fire Protection Association. Available in pamphlet form from the NFPA, 60 Batterymarch St., Boston, they will also be included in the 1955 edition of the National Fire Codes.

The standards, by numerical designation, title and price, are: #15—"Standards for Water Spray Systems for Fire Protection"—fifty cents; #19—"Specifications for Motor Fire Apparatus—Pumper Apparatus; Water Tank Fire Apparatus; Ladder Truck (Aerial); Ladder Truck and Pumper (Quadruple Combination)"—fifty cents; #193—"Standard Procedure for Aerial Ladder Testing"—thirty-five cents.

Fire Safety for Radiochemical Operations

An informational text for recommended fire-safe practices in laboratories handling radioactive materials has been published by the National Fire Protection Association. Designated NFPA publication No. 801, "Recommended Safe Practice for Laboratories Handling Radioactive Materials," its recommendations are directed both to the fire protection specialist and to designers and operators of such laboratories. It is available in pamphlet form (41 pages, 50 cents per copy) from the NFPA, 60 Batterymarch St., Boston 10, Mass.

FOR FLAME SPREAD

...a radiant panel test

The apparatus at right measures the rate at which flames spread along the surface of various materials. Reproducible for evaluating building materials, it can provide manufacturers and builders with design data to help in reducing fire hazards in factories and homes.

A METHOD FOR measuring the rate at which flames spread along the surfaces of various materials has been developed by the Fire Protection Section of the U.S. Bureau of Standards. This convenient and reproducible method for rating building materials—especially those used for internal finishing—will provide both manufacturers and builders with design data to be used for reducing fire hazards in buildings. Developed by D. Gross, J. J. Loftus, and A. F. Robertson, the method is simple and versatile, the equipment compact and relatively inexpensive. Both the equipment and the method can be duplicated quite easily by manufacturers for quality control testing and by laboratories for evaluating flammability of materials.

By permitting visual measurement of the rapidity and severity of flame propagation, the test assesses quantitatively the variables that contribute to the spreading of fire along the surface of building materials. Results from the tests appear to be somewhat similar to those obtained in tunnel tests with much larger and more cumbersome apparatus.

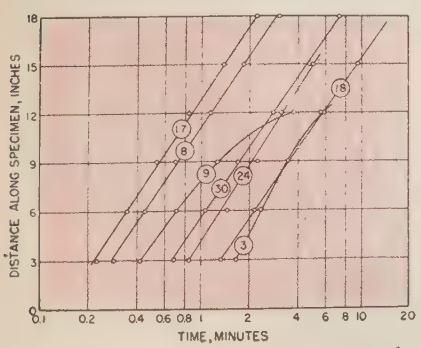
Standard test procedures have been in use for many years for evaluating the fire resistance or fire endurance of many types of building structures. In these tests the ability of a member to act as a fire barrier when exposed to a "standard" fire is measured by the interval of time required for structural collapse, fire break-through, or excessive heat transmission. Methods for evaluating the rate at which a fire will develop or spread through a room or portion of a building are not so well standardized. The Bureau has studied a variety of test methods that have been used for this purpose. When used to evaluate the flame spread properties of many materials the method described here is considered to be an improvement over other methods previously used or proposed.

Table 1 lists flame spread index data together with smoke measurements, which have been made on a large variety of building materials. The order in which these materials are classified by the test method appears to be similar to the flame spread hazard as adjudged from previous experience. Experiments to indicate the extent of correlation between the test results and the actual hazard are being planned.

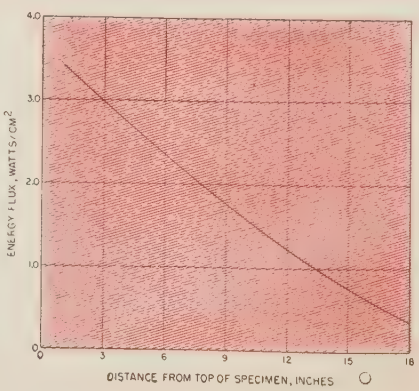
Readers who are interested in reproducing this test equipment are invited to write Fire Protection Section, Division 10.2, National Bureau of Standards, Washington 25, D. C.

Picture and charts by courtesy of National Bureau of Standards.

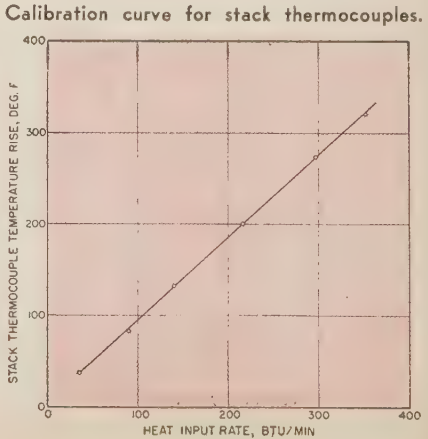
Graph shows flame front progression along specimen surfaces. Numbers correspond with numbers indicated in table 1.



Graph shows energy flux incident on specimen surface mounted for test.



Calibration curve for stack thermocouples.



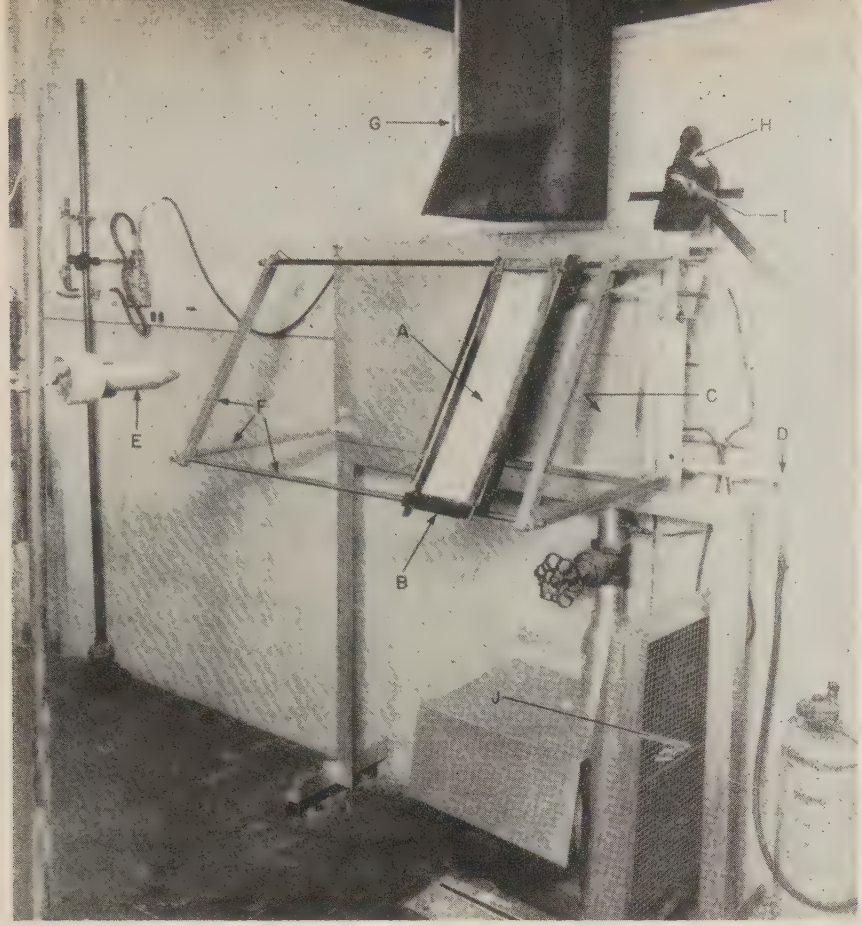


Table 1. Flame Spread Test Results

Specimen No.	Material	Nominal Thickness	Bulk Density	Moisture	Flame Spread Index[a]	Smoke
		in.	lb/ft³	%[b]		mg
17	Fbd.[c] perf.[d] tile, finish removed	1/2	15.7	5.4	336	0.1
28	Fbd. "A"	1/2	20.0	8.0	278	.4
8	Fbd. "J" unfinished	1/2	18.0	7.0	244	.2
30	Plywood, unfinished exterior	1/4	42.3	6.8	143	.3
18	Hardboard common "H"	7/32	59.8	3.8	136	4.1
23	Hardboard common "M"	1/4	63.5	3.8	121	5.2
16	Fbd. perf. tile	1/2	16.7	5.8	116	0.3
13	Fbd. "J" and paint "A"	1/2	18.3	6.5	107	.4
24	Red oak	3/4	40.0	6.5	99	.3
21	Fbd. "C"	1/2	19.7	6.0	94	.2
9	Fbd. factory finish	1/2	20.2	6.6	83	.2
12	Fbd. "J" and paint "B" 250 ft²/gal	1/2	17.0	6.2	59	.6
11	Fbd. "J" and paint "B" 125 ft²/gal	1/2	17.8	6.9	27	.9
26	Gypsum board "G"	3/8	50.5		14.3	.0
3	Gypsum board "K"	3/8	47.4		13.3	.1
6	Mineral base tile	3/4	19.3	3.4	10.5	.0
22	Fbd. "I" retardant finish	1/2	19.0	6.4	4.5	.5
14	Fbd. "J" mineral spray	1/2	21.9	7.7	3.4	.2
7	Glass fiber batt	1	4.3	1.2	1.8	.2
2	Cellulose-mineral board	7/8	47.8	7.5	1.3	.1
5	Glass fiber tile	3/8	10.3	0.6	1.2	.3
15	Fbd. "J" 1/8 in. mineral surface	5/8	42.2	7.5	1.2	.2
31	Plywood exterior aluminum foil finish	1/4	41.6	6.3	0.9	.1
4	Glass fbd.	2	11.0	0.4	.6	.2
1	Asbestos cement board	3/16	117.0	.6	0	.0

[a] Each tabulated value is the arithmetical mean of five specimen tests.
[b] Based on weight after drying at 221°F.
[c] Fiberboard.
[d] Perforated.

Telephone Alarm Systems

The use of telephones for fire alarm purposes may be put into three categories: (1) use of the commercial telephone system with its usual number of telephones in residences and business establishments; (2) use of the commercial telephone system supplemented by telephones, usually of the coin-operated type, installed at street intersections and available to the public; and (3) installation of a private telephone system leased from the telephone company with telephones installed at street intersections, available to the public and directly connected to a central fire alarm headquarters, according to a recent bulletin of the National Board of Fire Underwriters.

The first category is not considered as a municipal fire alarm system and cannot replace such a system, but is a valuable adjunct to a municipal fire alarm system.

The second category is recognized as being of limited value as an addition to, or in place of, a municipal fire alarm system. The N.B.F.U. "Standard Schedule for Grading Cities and Towns of the United States" allows, for street telephones accessible to the public, up to one-half the credit for municipal fire alarm boxes in the same locations. This credit would be reduced by use of dial-type, coin-operated telephones.

The third category, provided it has characteristics in accordance with the intent of the provisions of NBFU No. 73, "Standards for Municipal Fire Alarm Systems," can be considered as a municipal fire alarm system on the same basis as a telegraph-type system. Although telephones were proposed for this use as early as 1929, it is only in recent years that installations have been made.

Any municipal fire alarm system should have two essential parts; the first is a means whereby a citizen can report a fire from a location on the public streets to fire alarm headquarters, the second is the means of transmitting the alarm to the fire department for response of apparatus. Fire alarm headquarters contains the facilities and personnel necessary for receiving and transmitting alarms. *(Cont'd on next page)*

Fire alarm boxes, regardless of the type of system, should be conspicuous and well marked, located preferably at street intersections and distributed so that all built-up areas of the municipality are properly protected. The operating device of a box should be visible and readily available and of such design and so located as to make the method of its use apparent; no method of transmitting alarms should depend solely upon voice transmission for designating the location.

In the only telephone-type fire alarm system inspected to date, the box used is the standard telephone company outdoor-type telephone box, distinctively labeled and painted and designated by bands painted on supporting poles. The operating instrument, a standard telephone handset resting on a hook, is reached by opening the spring-loaded door on the front of the box. The box is small and care must be exercised in replacing the handset after use so that the cord does not prevent the handset from depressing the hook. A new design of outdoor-type telephone box has been developed which (1) will be used exclusively for fire alarm purposes, (2) will more closely resemble the traditional shape of fire alarm boxes, and (3) will minimize the handset replacement problem; such boxes will be installed in future telephone-type fire alarm systems.

In general, fire alarm boxes, regardless of type, should be distributed in accordance with established standards. In the above-mentioned system, a telephone-type fire alarm box is located at every street intersection where a traffic control light has been installed; a few boxes are also installed in other locations. This policy has advantages, as traffic lights would be installed at the intersections of the most heavily traveled streets and, if the policy were understood by both the citizens and visitors to the city, would serve to indicate the location of a box. There are also disadvantages in that the fire alarm superintendent, or other municipal department head in charge of the system, will probably not have a voice in deciding traffic light locations and therefore may find his departmental budget being increased regardless of his wishes. Further, such traffic signals may be in locations remote from buildings requiring protection, and, in areas where traffic lights are close together, more boxes may be installed than needed thereby reducing much of the value of the box in the overall distribution pattern.

Boxes are connected to switchboard facilities in fire alarm headquarters by individual circuits. Removing the handset from the hook will cause an indicating light in headquarters to light, thereby giving the location of the alarm without dependence upon voice transmission. This light remains on even though the handset is immediately replaced. Circuits to boxes are normally-closed, all-metallic circuits using cable and wires of the telephone company. Circuits are supervised up to and including the cord of the handset of the box. The circuit design is such that a ground on one side of the circuit, known as the tip side, will give a trouble signal at fire alarm headquarters and a ground on the other side, known as the ring side, will give both a trouble signal and a false alarm at fire alarm headquarters. Circuits pass through one or more telephone exchange buildings.

Fire alarm circuits enter only the frame room of one or more exchange buildings where they connect to the main frame and the protection frame. An error on the part of a careless workman in the frame room could interrupt a circuit possibly causing a false alarm or even interrupting transmission of an alarm from a street box; therefore, clear identification of the terminals of all circuits in use for fire alarm purposes is essential.

The circuits on the main frame are grouped and the group of terminals covered by a plastic shield hinged to the frame and appropriately identified; on the protector frame, terminals of circuits are covered with a red plastic case. Testing facilities and a trouble supervisory panel and bell are located where a telephone company employee is always on duty.

The equipment provided may vary in each system depending upon the extent of the system.

The system inspected has a standard 3-position telephone switchboard with 420 jacks available for termination of street box circuits with about two-thirds in use; each jack has two indicating lights for alerting the operator to an alarm signal from the street box. Above each horizontal row of jacks is mounted a card showing the location and the first alarm response to the box. Multipled jacks are provided for connection to the public telephone system, the police department switchboard, and the telephone system for municipal departments. A total of 45 cord sets are installed. Alarms are recorded by duplicate voice-actuated magnetic tape units, one recording channel being provided for each operator's position; time and date of receipt of alarms are not automatically recorded. Standard telephone practice uses a rectifier with a floating, positive side grounded battery which provides current for both operation of circuits and supervisory devices, a violation of the fundamental fire alarm principle that the same current source shall not be used for both a supervisory device and operation of the component being supervised; future fire alarm installations are expected to incorporate separate current sources. A supervisory panel installed adjacent to the switchboard consists of an indicating light for each box circuit and an audible signal to show an open or grounded circuit condition. Except as noted above, and for the lack of a permanent and automatic recording of the location and time of an alarm from a street box, the essential required facilities are provided in fire alarm headquarters for receipt of alarms from street boxes.

Each fire station is required to have two separate and distinct connections to fire alarm headquarters by which they receive notification that response of apparatus and men is expected; in addition, a telephone line which does not depend upon connection through the commercial telephone system is required. One of the alarm circuits must be a supervised metallic circuit for coded signals or symbols for graphic recording. The other circuit may be arranged for transmission of coded signals, symbols for graphic recording, or voice through radio or wired amplification circuits.

AT RIGHT—Women employees receive special instruction in handling lightweight fire extinguishers to put out simulated laboratory fire.

BELOW—Plant physiologist puts out solvent fire with CO_2 extinguisher during one of weekly fire-fighting classes at drug manufacturing plant.

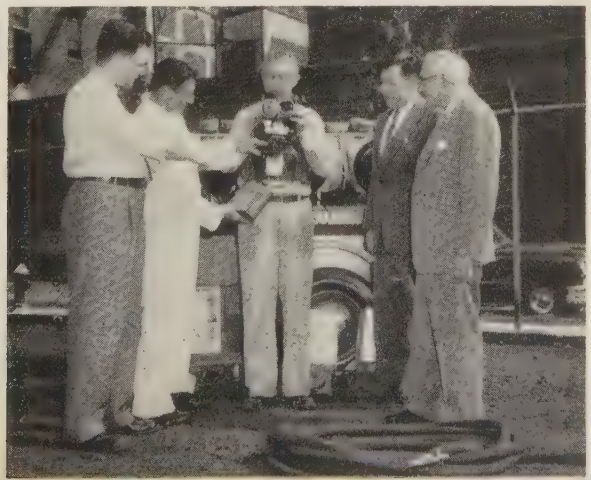
Fire Control Program

What may one day be the world's largest volunteer fire brigade, 4,000 members strong, is being formed by Chas. Pfizer & Co., Inc., Brooklyn, N. Y., drug and chemical manufacturing firm.

Each week, 40 production and research employees from throughout the plant gather at the fire demonstration area for a practical course of instruction in fire fighting. The students are introduced to the various types of fire extinguishers available. Members of the permanent fire brigade demonstrate the proper way to handle the extinguishers. They also show the students the right and wrong way to handle different fires.

Each of the students handles the extinguishers and puts out an actual solvent fire with two different size extinguishers. Every production and research employee in the plant will eventually attend one of these fire-fighting classes and actually fight a fire.

The fire-control program is prefaced by a continuous fire prevention education program. Since it is better to prevent a fire from starting rather than fight a fire, Pfizer employees are constantly reminded, "When you're doing a job right, you're doing it safely."



Employees are taught proper use of masks when controlling fire.

KEEPING UP WITH...

EXPLOSION EXTINGUISHER

Developed originally for the protection of fuel tanks of military aircraft, the explosion-suppressing system made by the Fireye Div., Electronics Corp. of America, is also finding industrial application for the protection of enclosed tanks, vessels or equipment containing explosive vapors or dusts. The detecting unit, placed inside the tank, consists of an infrared-sensitive photoconductive cell. It reacts to the opening flash of an explosion and sets off a small detonator that sprays the extinguishing liquid through the tank's air space. The response is so rapid that the extinguishing liquid suppresses the explosion before it has built up destructive pressures.

For details, use **Key # FP-1** on Inquiry Card on page 71.

RAG DISPENSER-DISPOSAL UNIT

Fire prevention as well as convenience is a feature in the design of a new towel or wiping rag dispenser-disposal station developed by The Protectoseal Co. This on-the-job station consists of a stand with two storage containers, each with different fire-prevention characteristics.

The top container, mounted on the stand, is designed for the storage of clean towels, waste or wiping rags. The cover is normally in an open position for easy access, but should a fire occur in this upper section, a fusible link melts and automatically drops the cover to smother the fire. The lower bin is for soiled and oily towels or cleaning cloths, and its cover is always closed. To deposit dirty rags, the

cover can be lifted by stepping on the foot treadle. Release of pressure on the treadle automatically closes the cover again.

For details, use **Key # FP-2** on Inquiry Card on page 71.

FIRE HOSE PROTECTOR

A new mildew-resisting, waterproofing material, developed by The B. F. Goodrich Company Industrial Products Division and applied to fire hose jackets, resists moisture absorption and mildew attack. Hose treated with "Superseal" will also help fire fighters in below-freezing temperatures. The water-repellent action maintains hose flexibility in weather conditions that freezes the covers of conventional hose. Improved water repellency also reduces the weight at any temperature, since long lengths of water soaked hose are hard to handle.

✓ **Fire Protection Series** other articles in Sept., Oct., Nov.

Recent Fire Protection Developments

The Superseal treatment is available in all sizes of fire hose used by municipal fire departments, in industry, institutions, forestry and military use. Covers so treated are light brown in color and have a dry "feel."

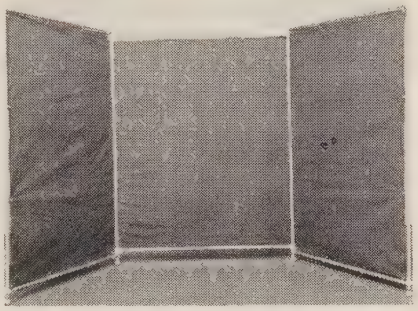
For details, use **Key # FP-3** on Inquiry Card on page 71.

MAGNESIUM FIRE EXTINGUISHER

The Buffalo Fire Appliance Corporation realizing the serious fire hazard existing in industry due to magnesium chip fires, announces the development of their new M-X Magnesium chip fire extinguisher, the first extinguisher to employ a liquid as an extinguishing agent. Available in 2 quart and 2½ gallon capacities, the new extinguisher will positively extinguish incipient magnesium fires, according to the company. The 2 quart model is constructed of drawn brass and the 2½ gallon model is constructed of stainless steel, possessing respectfully, 175 and 200 P.S.I. with nitrogen or air. Both models have been tested at 500 P.S.I.

The lightweight liquid agent is non-toxic, non-corrosive, non-abrasive, will not freeze and is a non-conductor. It does not produce excessive smoke or irritating fumes when in operation and leaves magnesium fires cool enough to handle. Patent pending.

For details, use **Key # FP-4** on Inquiry Card on page 71.



WELDING SCREENS

Fire-resistant industrial welding and grinding shields have been developed by The Astrup Co. They are portable partitions and curtains which surround the welder or grinder on three sides, preventing the splatter of coolants, oil and flying sparks.

The new three sided "Port-A-Screens" and portable folding screens are light in weight, yet sturdily constructed. They are easily moved because their tubular steel framework is mounted on friction-free balls. The covers are made of top-grade fire-resistant duck, which is also treated to resist water and mildew. In addition to fire prevention, they protect workers against eye injuries and burns from sparks and flying chips. They are offered in many sizes, and can be purchased either as a complete unit, including cover and frame, or cover only.

For details, use **Key # FP-5** on Inquiry Card on page 71.

NEW PORTABLE EXTINGUISHERS

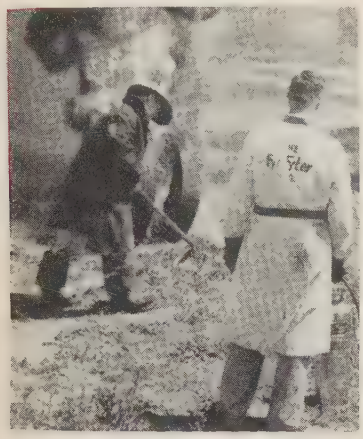
A new line of wet chemical portable fire extinguishers which includes pressurized and brass container units has been introduced by Walter Kidde & Company, Inc. The new line includes a 2½-gal. pressure-operated combination water or anti-freeze extinguisher. With its tin lined, brass container construction, it is completely resistant to corrosion. The unit has an "on–off" squeeze type of valve and a built-in pressure gauge which shows the readiness of this portable for use. It may be pressure charged to 100 psi at any gas station charging pump. Other additions to the line are 2½-gal. and 5-gal. pump tank type extinguishers using either stainless steel or copper containers, charged with clear water or anti-freeze solutions.

Also new to the line are 1-qt., 1½-qt. and 1-gal. carbon tetrachloride extinguishers and cholorobromomethane extinguishers which are pressurized with either air or nitrogen to 150 psi. To avoid accidental discharge all of the pressurized extinguishers have a safety latch.

The containers' construction elim-

inates the possibility of seam leakage and provides greater strength. Hose fittings on these units are brass screw machine parts rather than castings or band strips. All portable extinguisher shells are tested to 500 psi and are approved by Underwriters' Laboratories.

For details, use **Key # FP-6** on Inquiry Card on page 71.



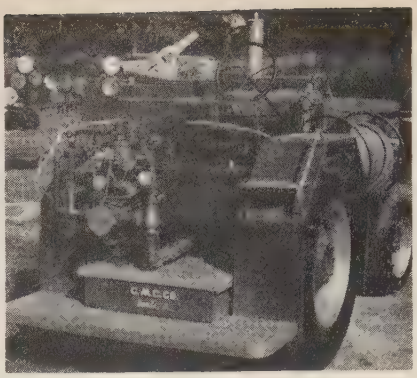
TIRE FIRE EXTINGUISHER

Truck tire fires, which are difficult to subdue, can be put out with Fyr-Fyter's improved line of 2½-gal. Loaded Stream Instant extinguishers.

The Karbaloy chemical in these extinguishers is now expelled through a special shut-off nozzle that permits the operator to conserve the liquid. In extinguishing deep-seated rubber tire fires, the operator can stop the flow of the Karbaloy liquid while he gains new and better vantage points to fight the fire. The shut-off nozzle on the Loaded Stream Instant is also equipped with a special spray tip which fans out the liquid onto the burning rubber surface.

Water will also effectively knock down a truck tire fire, but too many gallons are required for fires that might occur on the road. The manufacturer claims that Karbaloy, unlike other chemicals including water, has a penetrating effect on both rubber and wood which puts out blazes more quickly and fireproofs burned and unburned surfaces as it is being sprayed.

For details, use **Key # FP-7** on Inquiry Card on page 71.



INDUSTRIAL FIRE TRUCK

A compact, highly mobile fire truck, designed for use inside of factories and warehouses as well as for outside, is announced by Conklin-Mills-Conklin Co. The versatile "Fire Trac" units provide fast, efficient fire fighting facilities. The units are only five feet wide and 11 feet long and are equipped with water tanks, wetting agents, and foam equipment.

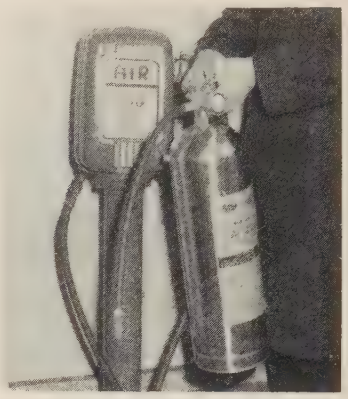
For details, use **Key # FP-8** on Inquiry Card on page 71.

FIRE RETARDANT FOR WORK CLOTHES

A special fire retardant for the flameproofing of industrial clothing has been developed by Flamort Chemical Co. The product has passed all tests for tensile strength, aging, color change, flexibility and non-toxicity in addition to fire resistance. The textile fire retardant meets the requirements of the National Fire Protection Association and AST-MD 626-41T, and is said to be approved by State fire marshals, local fire departments and the National Institute of Cleaning and Dyeing.

The fire retardant is shipped as a dry concentrated compound, and the flameproofing solution is prepared by dissolving the compound in water. Work clothes are treated by immersion in the solution following the directions on the container. The chemicals are said to combine with the textile fiber, do not clog the pores, and thus permit the material to "breathe," an important factor in maintaining worker comfort.

For details, use **Key # FP-9** on Inquiry Card on page 71.



STORED PRESSURE EXTINGUISHER

No inverting or bumping is necessary for operation of the "Redi-Jet," a new type 2½ gal. water or anti-freeze fire extinguisher made by Stop-Fire, Inc. It is a one-hand operated stored pressure unit, pressurized with air or nitrogen to 100 psi. Discharge is accomplished with a squeeze-grip operating lever which also serves as a carrying handle at the top of the extinguisher. The powerful stream carries 35 ft. or more. With anti-freeze solution, the "Redi-Jet" is effective from –40 F to plus 120 F.

The unit has been fully approved by Underwriters' Laboratories, Inc., for use against wood, paper, rubbish, and all other Class A fires. Additional features include: controlled flow with spring loaded valve; no need for annual recharge, gauge provides a constant visual check; simple inexpensive servicing with a standard air compressor at any garage.

The "Redi-Jet" is built to withstand corrosive elements and rough usage. It features a one-piece seamless drawn 85–15 brass shell with corrosion-proofed interior, and solid brass fittings. The shell is leakproof: 450 psi hydrostatic test.

For details, use **Key # FP-10** on Inquiry Card on page 71.

PRESSURIZED WATER EXTINGUISHER

A pressurized water-type fire extinguisher, "Elk-Air," has been announced by Elkhart Brass Mfg. Co., Inc. An outstanding feature is the minimum cost of maintenance. It can be recharged simply by replacing the water and pressurizing by air the same as an automobile tire.

Valve controlled, Elk-Air is easy to operate. Merely pull the pin, direct hose nozzle and squeeze handle to release stream. The valve control permits stream to be turned on or off, conserving water and eliminating excess water damage. An easy-to-read pressure gauge indicates if extinguisher is ready for action. Tests show that the unit gives full capacity use of the 2½ gallons of water and will maintain

a steady stream length of from 35 to 40 feet, until water supply is exhausted with no dribbling or drop-off of stream. The extinguisher has a removable fill tube with anti-overfill feature, and carries the Underwriters' Laboratories Inc. Approval for Class A-1 incipient fires, which covers wood, cloth, paper and rubbish. It has a seamless brass drawn shell with all brass forged parts, and can also be supplied with an anti-freeze charge.

For details, use **Key # FP-11** on Inquiry Card on page 71.

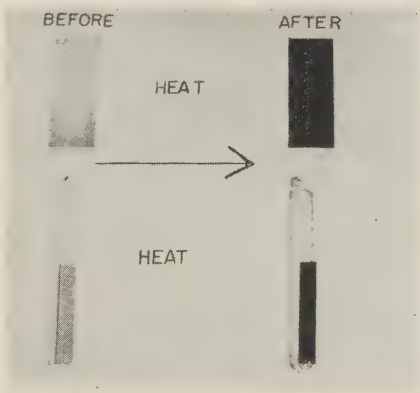
TEXTILE FLAME RETARDANT

A renewable type flame retardant, "X-12," designed to give improved temperature and aging stability in flame retarded materials has been developed by the Grasseli Chemicals Division, E. I. du-Pont de Nemours & Co., Inc. It is easy to apply in water solution, followed by drying, and may be used on paper, cotton, linen, viscose rayon and other cellulosic materials, but not on acetate rayon or synthetic fibers.

The temperature stability of X-12 means longer service life for the treated materials and shorter processing time because fabrics can be dried and ironed at higher temperatures. Special agents in the compound insure penetration, retention of original fabric or paper properties, and the prevention of flame after-glow. It has little or no effect on the color or light-fastness of a wide range of dyes. The compound is a crystalline powder which is dissolved in hot water. It resists dry cleaning solvents, but must be reapplied after laundering.

In the textile field, X-12 is suitable for treating workmen's clothes, curtains, bedspreads, felts, rugs, upholstery, etc. In the paper industry it can be used on cardboard, insulating papers, matchboard, crepe, tissue, molded paper products, etc.

For details, use **Key # FP-12** on Inquiry Card on page 71.

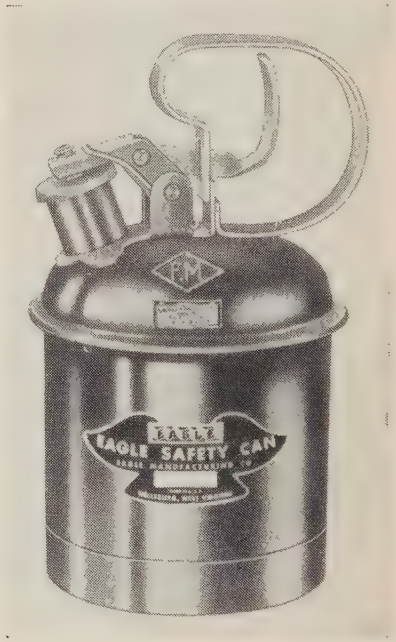


THERMOSTATIC PAPER

Heat-sensitive papers have been developed by The Paper Thermometer Co. for accurately determining temperatures and at the same time recording the temperature effects permanently. "Thermopapers" are a graded series of heat-sensitive papers calibrated for temperatures from 113 to 580 degrees F. When the temperature reaches a predetermined amount the white coating turns black. The maker claims that accuracy is within 1 percent above or below the stated temperature. The paper strips are available open or sealed in glass tubes.

Fire prevention uses include placement of the strips around furnaces, hot air conduits, steam pipes, electrical equipment, motors and other areas where fires might start from overheating. They can be used for recording temperatures of ovens, sterilizers, autoclaves, drying operations, etc. They can also be packaged with biologicals, foods and heat sensitive products to determine maximum temperatures attained during shipment or storage.

For details, use **Key # FP-13** on Inquiry Card on page 71.



TRIGGER-GRIP SAFETY CANS

A complete new line of safety cans for use where explosive or flammable liquids are handled is being introduced by Eagle Manufacturing Co. The new line is approved by Underwriters' Laboratories and Factory Mutual for handling or storing oil, gasoline, or similar liquids in the factory, home, farm, camp, service station, etc.

Featured in the new series are safety cans of five sizes: 1 qt., 2 qt., 1 gal., 2½ gal., 5 gal. The three smallest sizes have a one-handed trigger-grip handle, while the two largest safety cans have free-swing

handles. Both types have a self-adjusting protective guard cap which prevents leakage if can is upset.

All cans are of one-piece construction with no seams, as body and breast are welded together electrically under electronic control. The entire line is made from heavy 24-gauge terne steel which is given a high-gloss red baked finish. Bottoms are reinforced with heavy-gauge steel hoops.

For details, use **Key # FP-14** on Inquiry Card on page 71.

RADIOACTIVE FIRE DETECTOR

A new type of detector that spots fires in their earliest stages by reacting to invisible combustion gases, smoke, slow smoldering, as well as open flame, has been developed by Pyrene—C-O-Two. The fire detecting unit is used as part of a complete alarm system which can also automatically operate extinguishing systems or fire doors and other fire control equipment.

An unusual feature of the detector head is that it utilizes radioactive materials to provide highly sensitive ionization chambers. Called the "Pre-Detector System," each head gives coverage for an unusually wide area and as many heads as necessary may be connected in a circuit leading to a fire indicating cabinet or space indicating cabinet. Both visual and audible signals indicate the presence of fire in its incipient stages. The manufacturer claims that the new system gives much quicker response to fire than other types of heat, flame, or smoke detecting devices.

For details, use **Key # FP-15** on Inquiry Card on page 71.

ALUMINIZED FIRE SUIT WITH BREATHING UNIT

A new aluminized fire suit has been announced by Wheeler Protective Apparel, Inc. for fire rescue workers and incorporates an air respirator which enables the worker to breathe for extended periods of time while inside the suit.

The "Fire King" is made from aluminized tropic-weight asbestos fabric which reflects up to 90% of the heat generated in the fire, permitting rescue even in direct flame. The lining is of neoprene coated fiberglass for additional resistance to heat, abrasion, water, oil, grease and acids. This also forms an effective vapor barrier. There is a built-in Bullard hard hat to protect the wearer from head blows. A pyrex vision piece in the helmet is replaceable and is ventilated to prevent fogging.

The Scott Air-Pak, self-contained breathing equipment, is worn underneath the suit and pro-

vides enough air for approximately 15 minutes work inside the suit at extreme exertion. The Air-Pak offers protection against gas, smoke, dust, or fumes and will operate successfully in temperatures as low as 20 below zero. Cool air, not oxygen, is used in the Air-Pak, making for safer operation in flames.

For details, use **Key # FP-16** on Inquiry Card on page 71.

EXTINGUISHER SERVICING DEVICE

A fire extingusher servicing device for removing extinguisher heads safely and quickly has been introduced by the Central Safety Equip-

ment Co. The product has been designed for use by industrial and commercial firms maintaining extinguishers and extinguisher servicing organizations. It enables one man to remove an extinguisher head easily.

The device consists of a stainless steel impact wrench and adjustable aluminum gripper base. To remove the "head," the extinguisher is placed on the gripper base and locked into position by a foot controlled "brake," adjustable for 1½ and 2½ gallon extinguishers. The impact wrench is then applied. Through a loose, swinging action in the handle, impact for jarring loose the head is achieved without damage to the extinguisher, head-threads or operator.

For details, use **Key # FP-17** on Inquiry Card on page 71.

VARIED PRESSURE DRY CHEMICAL EXTINGUISHER

A new 10-pound pressurized dry chemical fire extinguisher which

carries Underwriters' approval for a pressure range of from 150 to 250 pounds has been announced by Walter Kidde & Company, Inc. The advantage of such a wide range of working pressures, according to Kidde engineers, is that the unit will work satisfactorily if only 150 pounds of air pressure is available.

The unit features a pistol grip trigger release mechanism, a new dust and moisture-proof gauge which shows at a glance the unit's charged pressure. It also uses a diffuser horn which gives extra wide coverage of the discharge pattern for flammable liquid and electrical equipment fires.

For details, use **Key # FP-18** on Inquiry Card on page 71.

HEAT RESISTANT HOOD

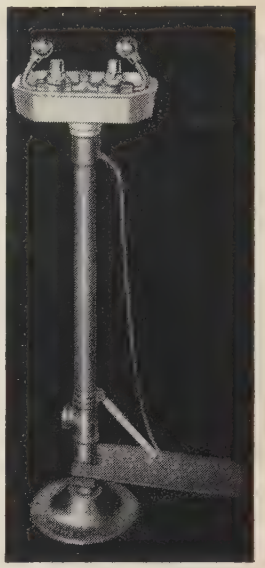
A lightweight protective hood made of "Fyre-Armor," the aluminized flame and heat resistant fabric, has been introduced as a firefighter's weapon against radiant heat temperatures as high as 2500° F.

The hood features high-heat resistant window, complete freedom of movement and protection against radiant heat.

"Fyre-Armor" is a heat and flame resistant fabric made with various metallic layers and an outside coating of aluminum foil. It is also available in firefighting suits, rescue blankets, industrial aprons, mittens, leggings and boots.

For details, use **Key # FP-19** on Inquiry Card on page 71.

BRIDGE THE "DANGER PERIOD" WITH HAWS EYE-WASH FOUNTAINS



Even though summoned medical aid arrives as rapidly as possible, time elapsing between occurence of eye accidents and a physician's care is too often the period when permanent harm is done.

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(For details, use Key # M-14 on card on page 71)

A.S.S.E. Elects

Edward B. Landry, director of safety and health for the Post Office Department, has been installed as president of the American Society of Safety Engineers at the Society's Annual Meeting in Chicago, Illinois.

The Society, with a membership of 6,500 and 59 chapters in the United States, Hawaii and Canada, is an organization of safety engineers dedicated to upholding the standards of the profession and using its abilities for human service in the nation, the state and the community.

Others taking office for one year terms are Henry B. Duffus (first vice president), administrator of accident prevention, Westinghouse Electric Corporation; John F. Juli (second vice president), safety manager, Consolidated Western Steel Division, U. S. Steel; J. B. Johnson (Secretary), managing director of the American Society of Safety Engineers; George F. Nuernberger (treasurer), safety engineer, A. B. Dick Company.

Mr. Landry has been actively engaged for more than 26 years in safety engineering for industry and agencies of the federal government.

A member of the American Society of Safety Engineers since 1932, Mr. Landry belongs to many technical and safety societies, including the American Society of Mechanical Engineers General Safety Committee, Veterans of Safety, American Industrial Hygiene Association, Industrial Conference of the National Safety Council, Maryland Traffic Safety Commission, Montgomery County (Maryland) Safety Board, Federal Safety Council, and the Federal Fire Council.

He has served as an officer or committee chairman in many of these organizations, and has been technical adviser to the President's Conference on Occupational Safety. The American Standards Association cited him for his work on its War Standards Committees.

Plant Maintenance and Engineering Conference

Fifty sessions on 26 aspects of factory upkeep will highlight the seventh annual Plant Maintenance & Engineering Conference to be held concurrently with the Plant Maintenance & Engineering Show at Convention Hall, Philadelphia, January 23–26.

Both events are produced by Clapp & Poliak, Inc., New York exposition management firm. About 2,500 engineers are expected to attend the conference and some 20,000 industrial executives are expected at the show, which is one of the largest annual industrial expositions in the country. It has not been held in the East since 1952. About 400 companies are expected to exhibit some 5,000 different products and services in 278 basic types.

The 1956 program will be arranged in three groups. There will be two general conferences, which all registrants attend; eight concurrent sectional conferences, at which papers will be read; and 16 concurrent, informal round tables for discussions of special problems.

Six industries will receive special attention in the round tables: air transport, chemical, iron foundry, petroleum refining, paper mill and paper product and textile industries.

The conference will start with a general session on "How We Look at Preventive Maintenance," with two presentations, one from a metal-working plant and another from a process plant. The second general conference will be a panel discussion on "Maintenance Controls." This session will consider, "Planning and Scheduling as Designed for Effective Cost Control," "Inspection Procedures to Control Quality" and "Making the Maintenance Personnel Control Minded."

The eight sectional conferences will consider "Getting Maintenance People to Work as a Team," "Yardsticks to Measure Effectiveness of Maintenance," "Sanitary Standards and How to Meet Them," "Equipment Replacement Policies," "Using the Services of Independent Contractors," "Maintenance in

(For details, use Key # M-15 on card on page 71)

Plants on 24-Hour Operation," "Maintenance Painting" and "Design and Operation of Maintenance Shops."

The round table discussions, in addition to the five specially devoted to particular industries, include "Maintenance of Yard Structures and Yard Equipment," "How Punched Cards Facilitate Maintenance," "Getting the Most Out of Electrical Equipment," "Lubrication Practices," "Maintenance of Machine Tools," "Report Writing," "Relation of Maintenance and Purchasing Departments," "Insuring Effective Utilities for the Plant," "Forms, Records and Reports" and "Tool Room Control."

Advance registration cards and hotel information may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, N. Y.

Design Engineering Show

The first Design Engineering Show, a new departure in industrial expositions, will be held at Convention Hall, Philadelphia, May 14 to 17, 1956, it was announced by Clapp & Poliak, Inc., New York exposition firm which will manage the event.

The show is the first to be devoted exclusively to the needs of those engineers who design products for consumer and industrial use. Exhibits will include parts, components, finishes and basic materials, as well as testing machines, x-ray machines and other equipment with specific design engineering applications.

This will provide, on an annual basis, a complete view of developments in the design engineering function of industry. To supplement exhibits, a conference will be conducted at which papers will consider various applications of design engineering theory and practice.

Although all industries are confronted with design engineering problems, it is believed that 73 industries will have primary interest in the exhibits and conference, including: air conditioning, automotive, chemical processing machinery, coal mining machinery, construction machinery, die casting machinery, electrical appliances, electrical generating and transmitting equipment, electrical machinery, electronic equipment, fire protection equipment, forging machinery, foundry equipment, gas and oil production equipment, glass making machinery, grain processing equipment, heating equipment, hydraulic and pneumatic equipment, laundry and dry cleaning equipment, leather working machinery, lumber and saw mill machinery, marine equipment, materials handling equipment, metal working machinery and machine tools, nuclear science equipment, oil refinery equipment, paint making machinery, plastics producing and fabricating machinery, quarrying machinery, rubber processing equipment, shoe machinery, steel mill machinery, welding equipment, and woodworking equipment.

Design engineers and executives who wish to obtain advance registration cards or hotel information may write Clapp & Poliak, Inc., 341 Madison Av., New York 17, N. Y.

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industrial hygiene

WORKER WELFARE
in the era of automation

Edited in cooperation with
OCCUPATIONAL HEALTH INSTITUTE
Educational affiliate of
INDUSTRIAL MEDICAL ASSOCIATION

FROM THE IMPROVEMENTS that have already been brought about by mechanization and semi-automatic processes, it is reasonable to assume that higher levels of automation will further alter the extent and degree of the hazards to which workers have been exposed. We can expect that there will be fewer traumatic injuries. The workers' fingers and hands will no longer be exposed to the moving parts of the machine.

The need for manual handling of heavy stock in the loading and unloading of machines and in the transfer of stock from one point to another in the plant will also be eliminated, and along with it industrial hernias, crushed feet and back injuries. Ford Motor Company's experience indicates an 85.5 percent reduction in the number of hernias at operations where automatic equipment was installed.

In this and other respects automation will prove itself a great boon to industrial safety. Another environmental hazard, that of exposures to industrial dusts and other contaminants, has already been largely eliminated or controlled by engineering measures which incorporate some of the principles of automation.

While automation will relieve the day-to-day chronic exposures to toxic materials, the industrial physician will be faced with instances of acute or subacute exposures, particularly where maintenance work is involved. Workers accidentally and drastically exposed to toxic materials will require special and prompt treatment, and the industrial physician must have ready and available knowledge based on studies of the toxic properties of materials used in manufacturing. Industrial hygiene activities and toxicological research will not be materially altered by the advent of automation. A real need for both will still exist.

It is the industrial medical department which will be faced with most of the new problems created by automation. In many cases, these will not be completely new problems, but rather continuation and intensification of old ones. There will be fewer accidents, thus narrowing the role of the traumatic surgeon in industry, and certainly less chronic disease on the occupational scene, but there will be a tremendous increase in new and intangible problems that may affect the health of people, on and off the job.

Non-occupational disability is one of the most important problems confronting management today. It hardly matters where or how a man becomes ill or suffers an injury. The fact remains that he won't be on the job, and the result will be higher operating costs because of substitution of perhaps untrained personnel, spoiled products, higher disability wages, and many intangible losses. If automation leads to a shorter work day or work week, it will be even more important that the industrial health maintenance program include attention to home safety, and to health education and counseling.

Whether or not automation will increase the number of psychosomatic disorders remains to be seen. It may succeed in clearing up some of the difficulties that are the roots of maladjustment and other human relations problems in industry. It will relieve human beings of dirty, unpleasant jobs and backbreaking labor, take them away from repetitive, monotonous, highly specialized tasks such as those found on the assembly line, where keeping pace with the machine can build up tensions and frustrations.

But there is no assurance that all of the jobs under automation will be less routine and uninspiring.

(Continued on next page)

Workers will in many cases be shifted to better, more skilled jobs to handle the servicing, repair and construction of necessary equipment. But not all workers will have the ability to handle such jobs, even when the necessary education and training are provided for them. In such cases, responsible jobs would be a constant source of anxiety to the worker, thus creating emotional disturbances.

It is alleged that the highest incidence of gastric ulcers in the hourly wage group is found among machinists, who probably exert less physical effort than most mill workers. This would indicate that automated industry, with its trend toward more and more skilled work, needs to be concerned with the effects of mental and emotional stress on its workers. As the situation stands today, it has been estimated that 20 percent of all employees in peacetime are borderline emotional cases, unable to bear efficiently the stresses of industrial work.

No Basic Requirements Changed

Automation will change none of the basic requirements of a good health maintenance program. The keystone of such a program is the physical examination, including preplacement and periodic examination in the case of hazardous jobs. Transfer and terminal examinations are valuable as well.

The value of the pre-placement examination was emphasized in comparing shipyards which conducted such physical examinations with a group which did not. Compensation insurance losses were 50 percent higher in those shipyards not utilizing the preplacement physical examination, and the average number of hernias and serious cases per month were about three times as high.

In the automatic factory the pre-placement examination must be tailored to the new requirements. We can only surmise at this point what they will be. Certainly there will be a lessening of physical stress, so that physical standards for many jobs need not be so rigid. If a job requires that a man sit at a control panel and work with his hands, it would not matter if he were crippled.

In fact, he would undoubtedly be much happier than someone who has the physical ability to move about freely and who might become restless and dissatisfied if forced to restrict his movement. The worker must be considered in relation to the machine and to the working environment, and in the light of this, handicaps are often quite unimportant. In fact, a physical handicap can often be an asset rather than a detriment. A deaf man could concentrate on an exacting job without strain despite a noisy environment, and a blind man could do work requiring sensitive touch much more rapidly and accurately than a man with normal eyesight.

With the setting of new standards for employment, both physical and mental, the problem of the aging worker changes proportions. Many who would not have been acceptable for employment in industry because of major chronic diseases or impairments would be quite capable of handling jobs in automated industries which do not require physical strength or exertion. A major economic and social problem would thus be relieved, since the number of aged in the United States is increasing rapidly.

Periodic Tests Needed

The periodic physical examination in these early days of increasing automation can provide industrial physicians with valuable information. It is important that they be able to anticipate, and thus guard against, any deleterious effects of automation. At present, most industries confine the periodic examinations to employees who are exposed to recognized hazards, such as metal fume, solvent vapors, or unusual dustiness, and to executives. Some state laws require the periodic examination, at least in a limited way, of employees in certain jobs, such as hoisting engineers and locomotive operators. The periodic examination should be more extensively employed so that industry and its physicians can keep abreast of changing industrial health problems and can institute preventive measures.

But the most important member of the team is management itself. Without the wholehearted interest and support of management, without a full appreciation by industrial leaders of the value of health maintenance programs, both worker health and efficient production will fall far short of the optimum.

(Based on a speech given by Dr. C. Richard Walmer, Managing Director, Industrial Hygiene Foundation, before the American Management Association, Special Conference on Automation, Hotel Roosevelt, New York City, Oct. 10–12, 1955.)

Hygienic Guide Series

The American Industrial Hygiene Association has announced the publication of a series of information bulletins, called "Hygienic Guides," which will be made available to industry and other interested persons.

The purpose of the guides is to present authoritative and substantiated information on the toxicity of common industrial materials, and to bring together all of the pertinent information required for hazard evaluation. It is planned that Guides will be prepared covering all of the common industrial chemicals and materials. Also, it is hoped that Guides can be prepared for the new chemicals introduced to the industrial markets.

Each Hygienic Guide will include information on the following: 1. Maximum allowable concentration for both short and long term exposures; 2. Significant chemical and physical properties; 3. Major uses; 4. Evaluation of exposures; 5. Engineering control procedures; 6. Medical control procedures; 7. References to the literature.

Hygienic Guide sheets may be obtained from the American Industrial Hygiene Association, 14125 Prevost, Detroit 27, Michigan at 25 cents each. All orders for less than $2.00 must be prepaid. Individual Guides are now available for Acetaldehyde, Cadmium, Carbon Tetrachloride, Butyl Alcohol (N-Butanol) and Amyl Acetate.

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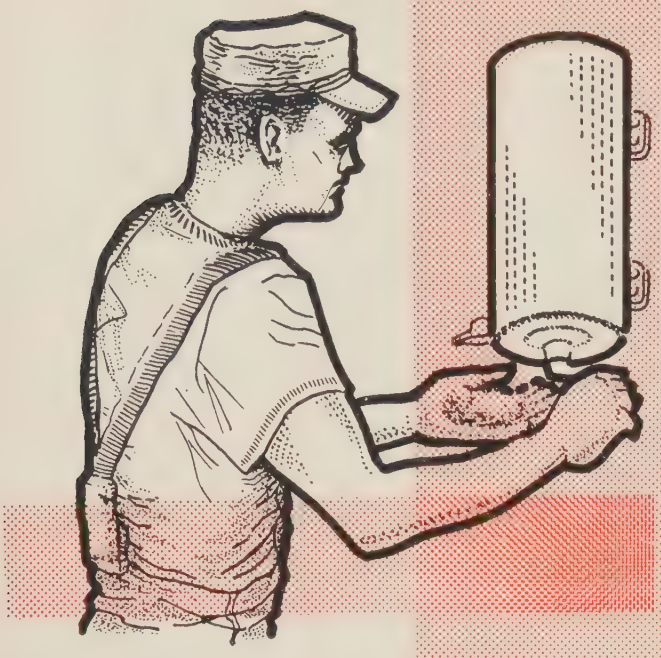

by **WILLIS J. BEACH**
Chemist
Technical Service Department
Sugar Beet Products Co.

THE HARMFUL EFFECT of various chemical solvents used on the hands has been known for many years. It was pointed up again in 1938 by Louis Schwartz when petroleum oils and greases held first place in a list of ten leading chemical causes of occupational dermatitis amounting to 14% of all cases reported. Solvents in general were the third leading cause with 10% of all cases reported throughout the nation. Since then, such chemicals as trichlorethylene, petroleum and coal tar distillates and chlorinated hydrocarbons, formaldehyde, crude petroleum, kerosene and gasoline have been branded as injurious to the skin.

However, there are few reports of either an experimental or clinical nature in the literature to indicate comparative skin-irritating properties of petroleum distillates in spite of their recognized action on the skin. One of the few pertinent studies, made by Oettel, stated that among the common aliphatic hydrocarbons decane and dodecane did not cause burning, itching and reddening of the skin. Various aromatics such as ethyl benzene, m-xylene were said to be highly irritating, while a lesser degree of irritation was present with benzene. The toxicity of the aromatic hydrocarbons of the boiling range 157–200°C has not been reported at this time. It is of interest that a subcommittee of the Medical Advisory Committee, American Petroleum Institute is at present contemplating developing information concerning toxicity of this class of compounds.

Recently George Morris has also listed many of the above as well as benzene, toluene and butyl cellosolve as possible skin sensitizers and irritants, and he observed that other authorities had also found that a large percentage of all industrial dermatitis cases were due to the use of raw solvents in skin cleaning.

In spite of this background, early formulators seeking a cleanser of high solvent power and greater cleansing ability, particularly for greasy, gummy and resinous soils (hard to remove in the presence of water) placed the emphasis on high solvency and cleaning efficiency. The safety aspects were somewhat overlooked.

It is evident from examination of various formulas for waterless hand cleaners that the compounders depended on the use of beneficial emollients to offset the dehydrating and defatting action of these solvents, but their skin sensitizing and irritating qualities still prevailed.

Back in this era the popular solvent was kerosene because it did an efficient cleaning job and was low in cost. It was emulsified with water by the use of ammonia soaps which were cheap and effective for such purpose. The evil-smelling combination of crude or even refined kerosene plus ammonia did little to enhance the acceptance of these products.

The first major advance was the use of odorless "level oils" and other deodorized petroleum distillates from which the odor was removed by various refining tech-

ess Skin Cleansers

niques. Also, organic ammonia derivatives such as the alkanolamines (being used in the cosmetic field) were found to be safe, effective and, above all, relatively odorless replacements for ammonia.

As a result, the sales of waterless hand cleansers expanded. Their use was far better than the indiscriminate use of raw and crude solvents found so commonly in the plant for hand cleaning, but there were still many reports of industrial dermatoses appearing to result from poorly formulated waterless hand cleansers. In fact, we still occasionally hear about such products.

At about the time the odorless spirits and alkanolamines came into use sufficient progress had been made in the technology of waterless cleanser raw materials to interest one company in initiating a program of product development. The research policy was predicated upon the belief that a safe product was now obtainable. Safety to the hands was therefore the first requirement. Effectiveness in function was second. Other requirements were: complete elimination of undesirable odor, pleasant appearance and after-feel, suitable consistency for dispensing, rapid break when on the hands, and good stability to heat, cold and shelf life. Such a product is now a reality and there are undoubtedly other similar products now finding acceptance.

Silicones are being used now in protective creams in which a large percentage must be incorporated to be effective. Their possible use in waterless hand cleansers has been thought of, but their role in this type of product (that leaves almost no residue) is a bit vague.

How can you distinguish between the safe and unsafe products? Perhaps the quickest and surest way is to select one that has an established reputation for safety. This can be done by selecting one of the more well-known producers and checking into at least two or three references submitted. You should find out directly from the safety director how long the product has been in use, how many users are involved, and under what conditions, i.e. the nature of the soil being removed. An occasional case of allergy is not significant. We have never heard of any cleansing agent that did not cause an occasional allergy reaction to someone.

Closed patch tests run by and evaluated by a competent dermatologist can only serve to screen out the more dangerous products. The main trouble with the closed patch test as applied to waterless skin cleansers is that you may come out with the wrong answer. The closed patch test involves direct contact between the product and a more sensitive area of the skin for a comparatively long period of time and can be unnecessarily rigorous.

The presence and nature of harmful solvents cannot be reliably detected by their odor in a waterless hand cleanser. Chemical analyses can shed light only to the expert. The emulsion can be broken and the solvent recovered, separated from the oil-soluble ingredients, and examined for purity. The boiling point and distillation range test on this fraction can be misleading for there exist safe solvents that are not petroleum distillates, strictly speaking, but which have the same distillation range as the kerosenes. Examination of refractive index will point up the difference, however. The presence of significant amounts of aromatics (benzene, toluene, xylene, naphthalene) can be determined from examination of the ultra-violet spectrophotometric curves run on the solvent fraction. The presence of sulfur, nitrogen, or halogen bearing hydrocarbons can be detected by the spectrophotometer or mass spectrograph. The degree and nature of hydrocarbon unsaturation is also pointed up by the infra-red spectrophotometric curve but a simpler iodine value test or sulfuric acid absorption test will usually suffice to indicate the presence of these undesirables. The solvents appearing to have the least history of skin irritation are the saturated hydrocarbons (paraffins) of moderate carbon chain length. These are quite unreactive and are bland when applied to the skin but are useful for soil removal. They should be very pure. We have found the new text: "Handbook of Cosmetic Materials, Their Uses, and Toxic and Dermatologic Actions," Greenburg and Lester, 1954 edition, Interscience Publ. Co., New York, to be helpful although somewhat incomplete in references beyond 1949. However, we recommend it. U. S. Public Health Service Publ. No. 364, titled: "Occupational and Related Dermatoses," by D. J. Birmingham and P. C. Campbell, Jr., is excellent.

The above-mentioned tests of course are complex, expensive and time-consuming. To set up specifications precluding the use of these harmful solvents without having facilities to test for them is only a half-way measure and will not in itself insure the end result—procurement of a safe product. The best way out of this difficulty is perhaps the easiest. Simply do a little inquiring. Locate a reliable supplier. Ask him to supply you with the necessary evidence that his product is safe. He may not wish to reveal the exact nature of the solvent he uses but he should at least be in a position to furnish you with chemical proof that his solvent and other ingredients do not contain any of the harmful chemical types mentioned in this discussion. You then have enough assurance of safety to start using the product on a limited scale. When the product has proved itself safe by the test of time and actual use, go into it full scale.

References and bibliography available upon request.

Threshold Limit for 1955

Adopted at the American Conference of Governmental Industrial Hygienists

Values are given in the following tabulation for the maximum average atmospheric concentration of contaminants to which workers may be exposed for an eight-hour working day without injury to health.

These values are based on the best available information from industrial experience, from experimental studies, and, when possible, from a combination of the two. They are not fixed values but are reviewed annually by the Committee on Threshold Limits for changes, revisions, or additions as further information becomes available. Threshold limits should be used as guides in the control of health hazards and should not be regarded as fine lines between safe and dangerous concentrations. They represent conditions only within which it is felt that workers may be repeatedly exposed, day after day, without their health being adversely affected. It is felt, at the present time, that workers should not be exposed to a working environment containing any of these substances in excess of the value indicated.

These values are not intended for use, or for modification for use, in the evaluation or control of community air pollution or air pollution nuisances.

Established Values

Gases and Vapors

Substance	PPM*
Acetaldehyde	200
Acetic acid	10
Acetic anhydride	5
Acetone	1,000
Acrolein	0.5
Acrylonitrile	20
Ammonia	100
Amyl acetate	200
Amyl alcohol (isoamyl alcohol)	100
Aniline	5
Arsine	0.05
Benzene (benzol)	35
Bromine	1
Butadiene (1,3-butadiene)	1,000
Butanone (methyl ethyl ketone)	250
Butyl acetate (*n*-butyl acetate)	200
Butyl alcohol (*n*-butanol)	100
Butyl cellosolve (2-butoxyethanol)	200
Carbon dioxide	5,000
Carbon disulfide	20
Carbon monoxide	100
Carbon tetrachloride	25
Cellosolve (2-ethoxyethanol)	200
Cellosolve acetate (hydroxyethyl acetate)	100
Chlorine	1
Chlorobenzene (monochlorobenzene)	75
Chloroform (trichloromethane)	100
1-Chloro-1-nitropropane	20
Chloroprene (2-chlorobutadiene)	25
Cresol (all isomers)	5
Cyclohexane	400
Cyclohexanol	100
Cyclohexanone	100
Cyclohexene	400
Cyclopropane	400
o-Dichlorobenzene	50
Dichlorodifluoromethane	1,000
1,1-Dichloroethane	100
1,2-Dichloroethylene	200
Dichloroethyl ether	15
Dichloromonofluoromethane	1,000
1,1-Dichloro-1-nitroethane	10
Dichlorotetrafluoroethane	1,000
Diethylamine	25
Dimethylaniline (N-dimethyl aniline)	5
Dimethylsulfate	1
Dioxane (diethylene dioxide)	100
Ethyl acetate	400
Ethyl alcohol (ethanol)	1,000
Ethylamine	25
Ethyl benzene	200
Ethyl bromide	200
Ethyl chloride	1,000
Ethyl ether	400
Ethyl formate	100
Ethyl silicate	100
Ethylene chlorohydrin	5
Ethylene dibromide (1,2-dibromoethane)	25
Ethylene dichloride (1,2-dichloroethane)	100
Ethylene oxide	100
Fluorine	0.1
Fluorotrichloromethane	1,000
Formaldehyde	5
Gasoline	500
Heptane (n-heptane)	500
Hexane (n-hexane)	500
Hexanone (methyl butyl ketone)	100
Hexone (methyl isobutyl ketone)	100
Hydrogen chloride	5
Hydrogen cyanide	10
Hydrogen fluoride	3
Hydrogen selenide	0.05
Hydrogen sulfide	20
Iodine	1
Isophorone	25
Mesityl oxide	50
Methyl acetate	200
Methyl alcohol (methanol)	200
Methyl bromide	20
Methyl cellosolve (methoxyethanol)	25
Methyl cellosolve acetate (ethylene glycol monomethyl ether acetate)	25
Methyl chloride	100
Methylal (dimethoxymethane)	1,000
Methyl chloroform (1,1,1-trichloroethane)	500
Methylcyclohexane	500
Methylcyclohexanol	100
Methylcyclohexanone	100
Methyl formate	100
Methylene chloride (dichloromethane)	500
Naphtha (coal tar)	200
Naphtha (petroleum)	500
Nickel carbonyl	0.001
Nitrobenzene	1
Nitroethane	100
Nitrogen dioxide	5
Nitroglycerin	0.5
Nitromethane	100
2-Nitropropane	50
Nitrotoluene	5
Octane	500
Ozone	0.1
Pentane	1,000
Pentanone (methyl propyl ketone)	200
Perchlorethylene (tetrachloroethylene)	200
Phenol	5
Phosgene (carbonyl chloride)	1
Phosphine	0.05
Phosphorus trichloride	0.5
Propyl acetate	200
Propyl alcohol (isopropyl alcohol)	400
Propyl ether (isopropyl ether)	500
Propylene dichloride (1,2-dichloropropane)	75
Stibine	0.1
Stoddard solvent	500
Styrene monomer (phenyl ethylene)	200
Sulfur monochloride	1
Sulfur dioxide	10
1,1,2,2-Tetrachloroethane	5
Toluene	200
o-Toluidine	5
Trichloroethylene	200
Turpentine	100
Vinyl chloride (chloroethane)	500
Xylene	200

** Parts of vapor or gas per million parts of air, by volume.*

Values

Mineral Dusts

Substance	MPPCF‡
Alundum (aluminum oxide)	50
Asbestos	5
Carborundum (silicon carbide)	50
Dust (nuisance, no free silica)	50
Mica (below 5% free silica)	20
Portland cement	50
Talc	20
Silica	
high (above 50% free SiO_2)	5
medium (5 to 50% free SiO_2)	20
low (below 5% free SiO_2)	50
Slate (below 5% free SiO_2)	50
Soapstone (below 5% free SiO_2)	20
Total dust (below 5% free SiO_2)	50

‡ *Millions of particles per cubic foot of air.*

Toxic Dusts, Fumes, and Mists

Substance	Mg. Per Cu. m.†
Antimony	0.5
Arsenic	0.5
Barium (soluble compounds)	0.5
Cadmium	0.1
Chlorodiphenyl	1
Chromic acid and chromates as CrO_3	0.1
Cyanide as CN	5
Dinitrotoluene	1.5
Dinitro-o-cresol	0.2
Fluoride	2.5
Iron oxide fume	15
Lead	0.15
Magnesium oxide fume	15
Manganese	6
Mercury	0.1
Parathion (O,O-Diethyl-O-p-nitrophenyl thiophosphate)	0.1
Pentachloronaphthalene	0.5
Pentachlorophenol	0 5
Phosphorus (yellow)	0.1
Phosphorus pentachloride	1
Phosphorus pentasulfide	1
Selenium compounds (as Se)	0.1
Sulfuric acid	1
Tellurium	0.1
Tetryl (2,4,6-trinitrophenyl-methylnitramine)	1.5
Trichloronaphthalene	5
Trinitrotoluene	1.5
Uranium (soluble compounds)	0.05
Uranium (insoluble compounds)	0.25
Zinc oxide fumes	15

Radioactivity. For permissible concentrations of radioisotopes in air see "Maximum Permissible Amounts of Radioisotopes in the Human Body and Maximum Permissible Concentrations in Air and Water," Handbook 52, U. S. Department of Commerce, National Bureau of Standards, March, 1953. In addition, see "Permissible Dose from External Sources of Ionizing Radiation," Handbook 59, Department of Commerce, National Bureau of Standards, Sept. 24, 1954.

† *Milligrams of dust, fume, or mist per cubic meter of air.*

Tentative Threshold Limit Values

The following values are suggested for further consideration before being presented for adoption as established values. (§ marks materials added this year and for which bibliographic material has been prepared. The other materials appeared in last year's report.) It is proposed that the entire list will be presented for adoption at the meeting of the American Conference of Governmental Industrial Hygienists in 1956, if no reason to the contrary is forthcoming.

Aldrin (1,2,3,4,10,10-hexachloro-1,4,4a,5,8,8a-hexahydro-1,4,5,8-dimethanonaphthalene)	0.25	mg/M³
Allyl alcohol	5	ppm
Allyl propyl disulfide	2	ppm
Ammate (ammonium amidosulfate)	15	mg/M³
Benzyl chloride	1	ppm
§ Butyl amine	5	ppm
Butyl mercaptan	10	ppm
Calcium arsenate	0.3	mg/M³
Chlordane (1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a-tetrahydro-4,7-methanoindane)	2.0	mg/M³
§ Chlorine trifluoride	0.1	ppm
§ Chlorinated diphenyl oxide	0.5	mg/M³
Crag Herbicide (sodium-2,4,dichlorophenoxy ethyl sulfate)	15	mg/M³
2,4-D(2,4-dichlorophenoxyacetic acid)	10	mg/M³
D. D. T. (2,2-bis-(*p*-chlorophenyl)-1,1,1-trichlorethane)	2.0	mg/M³
Diacetone alcohol (4-hydroxy-4-methyl pentanone-2)	50	ppm
§ Diborane	0.1	ppm
Dieldrin (1,2,3,4,10,10-hexachloro-6,7, epoxy-1,4,4a,5,6,7,8,8a-octahydro-1,4,5,8-dimethanonaphthalene)	0.25	mg/M³
§ Difluorodibromomethane	100	ppm
Diisobutyl ketone	50	ppm
EPN (ethyl-*p*-nitrophenyl thiono benzene phosphonate)	0.5	mg/M³
Ethyl mercaptan	250	ppm
§ Ethylene diamine	10	ppm
§ Ethylene imine	5	ppm
Ferro vanadium dust	1	mg/M³
Furfural	5	ppm
§ Furfuryl alcohol	200	ppm
§ Hydrazine	1	ppm
§ Hydrogen bromide	5	ppm
§ Hydrogen peroxide, 90%	1	ppm
§ Hydroquinone	2	mg/M³
§ Isopropylamine	5	ppm
Lead arsenate	0.2	mg/M³
Lindane (hexachlorocyclohexane, gamma isomer)	0.5	mg/M³
Malathon (0,0-dimethyl dithio phosphate of diethyl mercaptosuccinate)	15	mg/M³
Methoxychlor (2,2,diparamethoxyphenyl-1,1,1,trichloroethane)	15	mg/M³
§ Methyl acetylene	1,000	ppm
Methyl isobutyl carbinol (methyl amyl alcohol)	25	ppm
Methyl mercaptan	50	ppm
Molybdenum		
§ (soluble compounds)	5	mg/M³
§ (insoluble compounds)	15	mg/M³
p-Nitroaniline	1	ppm
Organo mercurials (as mercury)	0.01	mg/M³
Perchloromethyl mercaptan	0.1	ppm
Phenylhydrazine	5	ppm
Picric acid	0.1	mg/M³
§ Propylene imine	25	ppm
Pyridine	10	ppm
§ Quinone	0.1	ppm
Sodium hydroxide	2	mg/M³
Sulfur hexafluoride	1,000	ppm
Sulfur pentafluoride	0.025	ppm
TEDP (tetraethyl dithiono pyrophosphate)	0.2	mg/M³
TEPP (tetraethyl pyrophosphate)	0.05	mg/M³
§ *p*-Tertiary butyl toluene	10	ppm
§ Tetrahydrofuran	75	ppm
§ Tetranitromethane	1	ppm
Titanium dioxide	15	mg/M³
§ Trifluoromonobromomethane	1,000	ppm
Vanadium		
(V_2O_5 dust)	0.5	mg/M³
(V_2O_5 fume)	0.1	mg/M³
§ Zirconium	5	mg/M³

Beryllium: During the past few years, several papers have appeared in the literature which report a limit of 2γ per cubic meter of air for beryllium. Among these is the paper by Van Ordstrand, H. S.: Berylliosis, A. M. A. Arch. Indus. Hyg. 10:232-234 (Sept.) 1954, and one by Sterner, J. H., and Eisenbud, M.: Epidemiology of Beryllium Intoxication, A. M. A. Arch. Indust. Hyg. 4:123-151 (Aug.) 1951. Conflicting data from industrial experience has caused the Committee to postpone the suggestion of a Threshold Limit for this material. It is apparent that more epidemiologic work is needed for the establishment of a definite value.

Reference material has been prepared on each of the above substances and, though in some instances rather meager, is available for distribution. The committee would welcome suggestions of substances to be added and also comments, additional references, or reports of experience with these materials.

Committee on Threshold Limits
William L. Ball
L. T. Fairhall
Kingsley Kay
Seymour Silver
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Atomic Industrial Health Program

At a round-table discussion of "How to Solve the Problems of Safety and Health" at the National Industrial Conference Board's 4th Annual Conference on Atomic Energy in Industry, held in New York City last October, A. D. MacDougall, Medical Director of the Electric Boat Division of General Dynamics Corporation, outlined the health program set up during the building of the nuclear-powered submarine Nautilus.

In August of 1951 when the Electric Boat Division was awarded a contract to construct a submarine that was to be powered by nuclear energy, its industrial health program had been only slightly concerned with radiation. The only section with which medical people were concerned was the industrial radiography group. This group had used radioactive sources such as cobalt 60 and iridium in X-raying welded hull seams and other critical metal fatigue points on submarines. Employees in this group were very helpful in aiding us at the start of our new program.

We faced a different problem than that involved at other atomic enterprises such as Oak Ridge, Los Alamos and Hanford. People employed at these plants were cognizant at the start of the nature of the job and hazards involved. In our plant of about 5 thousand, many of whom have been with us up to 30 years, most have never been in contact with radiation.

We had had a record of being one of the safest shipyards in the country. With the new problem of radiation introduced we were forced to remodel our safety program. Fortunately our General Manager, Mr. Carleton Shugg, was formerly General Manager of the AEC's Hanford Works and Deputy Commissioner of the AEC. He specified the steps to be taken in starting our program. As Medical Director I was sent to various AEC installations to study their programs.

In our plant the hospital and safety sections were coordinated in the Industrial Relations Department. We established a new department, Health Physics, to supplement these departments in our new program. In addition to creating floor space for this new section, it was necessary to enlarge our hospital and laboratory and augment our staff. The Radiation Safeguard Committee composed of engineering, yard, and medical personnel was instituted to set standards of operations that followed the recommendations of the National Committee in Radiation Prevention and the Naval Radiological Safety Regulations. These regulations required physical examinations of all involved personnel including chest X-rays, urinalysis, blood counts, and slit-lamp eye examinations.

We started our orientation program at the same time as our physical examinations. This was given on two levels: supervisory and worker. The responsibilities of both were outlined. In addition, a handbook was mailed to all employees explaining radiation. It was mailed to their homes so that their families could better comprehend this new development.

Our program was put to test after the launching of the Nautilus. A control point, manned by Health Physics personnel, was the focal point for personnel and area monitoring near the ship.

Besides external radiation emitting from the reactor core we were also concerned with contamination. This was especially true when working with components in the reactor's primary system. We used the same prevention methods in dealing with this radioactive contamination as we would for any highly toxic gas or dust. We monitored the water of the Thames River and the air of surrounding Groton before and after the Nautilus reactor reached criticality. This was so we could establish a baseline in order to measure any change after the reactor became critical. In all our surveys we received utmost cooperation from the Connecticut State Department of Health.

Our program is a complete success. To the present day, there has not been one instance of a higher activity of radiation than is permissible by all AEC and Navy standards.

Felt as a Health Protector

Ordinary pressed felt, made from wool and other materials, is finding wide application in filters of different types, such as in industrial dust masks and respirators which guard workers against unsanitary fumes.

The felt used for filtering purposes must be made under rigid specifications, to provide porosity while at the same time preventing impurities from being breathed in by workers or entering refined liquid or foods.

Typical felt applications as filters are in a line of respirators manufactured by a leading firm which use 100% white wool filters. These filters give protection against any one or combinations of all-dusts, pneumoconiosis-producing mists, chromic acid mists, metal fumes and acid gases. The filters have a low resistance to breathing, and a long service life, and are manufactured under strict laboratory control.

Another type of felt filter, approved by the U. S. Dept. of Agriculture, gives heavy duty protection against highly toxic insecticides, such as systox, parathion, aldrin, dieldrin, chlordane, EPN, Nicotine, TEPP and HETP. Still others, made with the approval of the Bureau of Mines, are used to give protection against metal fumes produced in welding, burning, smelting and refining operations, and low concentrations of organic vapors and all types of dusts.

Another firm manufactures a line of respirators in which white non-woven wool felt is used. In one typical dust respirator, a reusable felt filter is ingeniously made by folding a specially cut piece of felt 30 square inches in size into a compact unit which fits snugly in the respirator nozzle. This material has very fine pores which are highly effective in blocking the passage of dusts, including finely divided silica. The felt filter can easily and quickly be removed and cleaned by brush or air pressure for reuse.

Because of the fine porosity of wool felt, it is likewise used as filters in air conditioning units, and in oil filters. One widely used filter used with oil burners employs nine wool felt cartridges placed one above the other in a "step design"—that is, alternate pieces are smaller than the others, in order to expose the greatest filtering area and trap the finest particles.

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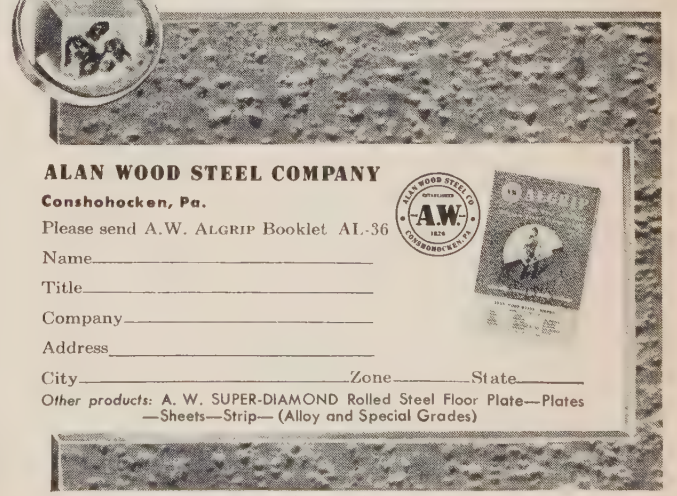

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City_____ Zone_____ State_____
Other products: A. W. SUPER-DIAMOND Rolled Steel Floor Plate—Plates —Sheets—Strip— (Alloy and Special Grades)

(For details, use Key # M-20 on card on page 71)

YOU CAN'T FALL
It's a Life Saver

It locks automatically—instantly—holds

SAFETY DEVICE FOR LADDERS

Prevents death and injuries from falling.

Inexpensive. Easy to install. Clamps to any rung ladders, peg ladders, pole or frame. No welding or cutting.

Automatic: Positive. Will catch workman if he starts to fall even if unconscious.

Simple to operate. No upkeep. Requires no attention from climber.

Notched rail **hot dipped galvanized.** Entire equipment rust and corrosion proof.

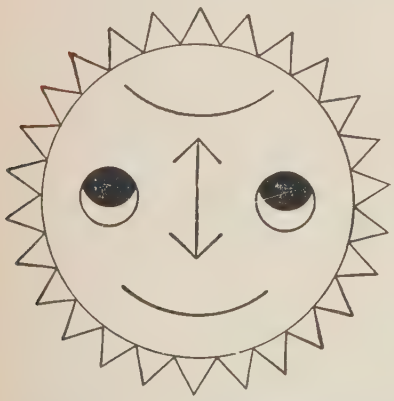
In use throughout country and abroad for approximately 6 years.

Patented. Manufactured only by

SAFETY TOWER LADDER CO.
1024 Burbank Blvd. P O Box 1052
BURBANK: CALIFORNIA

(Use Key # M-21 on Inquiry Card on page 71)

The tragic fact, our doctors tell us, is that every third cancer death is a needless death... *twice* as many could be saved.



LET'S LOOK AT THE BRIGHTER SIDE

Many thousands of Americans are cured of cancer every year. More and more people are going to their doctors *in time*...To learn how to head off cancer, call the American Cancer Society or write to "Cancer" in care of your local Post Office.

American Cancer Society ®

We welcome case histories of programs that have done a good job for you in preventing accidents. Merely address your letter or memorandum to The Editor, Safety Maintenance, 75 Fulton St., New York 38, N. Y. and enclose with it an outline of how you organized and launched your safety programs or actual literature you used in publicizing them. Safety is a cooperative venture—what helps one helps all.

Every safety director and company executive knows that eye accidents are costly in compensation, wasteful of labor skills, and demoralizing in terms of suffering and economic hardship to a man and his family.

The Wise Owl Club is an effective incentive plan to reduce needless and costly eye accidents by encouraging workers to wear proper eye protective equipment. Membership is limited to industrial employees who actually saved their sight from injury or loss by wearing eye safety devices. To date, over 10,500 eyes have been saved since the inception of the Wise Owl Club in 1947.

It originated as a suggestion-box idea at the American Car and Foundry Co. from a Negro worker, Joe Folks, and the idea spread like wildfire through numerous other industries. Feeling the snowballing effect of this idea, A.C.F. turned the project completely over to the National Society for the Prevention of Blindness, who now administer it on a non-commercial and non-profit basis. Chapters are formed simply by writing to the Wise Owl Club. When a member becomes eligible, he receives a certificate and an attractive gold-filled lapel emblem of a Wise Owl wearing safety glasses. In addition,

The **WISE OWL CLUB** *of* **AMERICA**

(NAME)

is enrolled as a life member of the

WISE OWL CLUB

of

(Company)

and is acclaimed for his judgment and foresight in the conscientious use of the eye protection which saved his vision in a work accident on

(Date)

EXECUTIVE DIRECTOR

NATIONAL SOCIETY FOR THE PREVENTION OF BLINDNESS, INC.

National Sponsor • New York, N. Y

a badge is worn daily, as a reminder to others that eye accidents need not cause loss of vision. Members are very proud and indebted to the Wise Owl Club, and are eager to encourage others to wear safety glasses. Explosives, molten lead, spikes, blast furnaces, are just some of the hazards that cause blindness and other eye injuries.

Not only industry, but Army, Navy and Vocational Schools are joining up. There is any and every type of industry represented, with every kind of job. To date, over 1300 chapters have been established, in all the 48 states, Canada, Hawaii, Puerto Rico and Cuba, representing 2 million employees, including many women.

The Wise Owl Club is also proving to be an extremely valuable public relations instrument. Testimonials are given when the Club receives every thousandth member, and public ceremonies are held. The invaluable publicity to the firm via newspaper and community relations indicates to the public that an industrial firm is concerned with the welfare of its employees. Readers desiring more information about the Wise Owl Club should contact the National Society for the Prevention of Blindness, 1790 Broadway, New York 19, N. Y.

• • •

The Award of Merit was presented to Purolator Products, Inc., pioneer manufacturer of automotive and other filtration equipment of Rahway, N. J., by the Liberty Mutual Insurance Company. The citation represents 1,036,476 hours worked without a disabling injury between January 13, 1955 and June 1, 1955. In accepting the award, James D. Abeles, President, paid tribute to the plant's four safety committees which, he said, have succeeded in making every employee "safety-conscious."

• • •

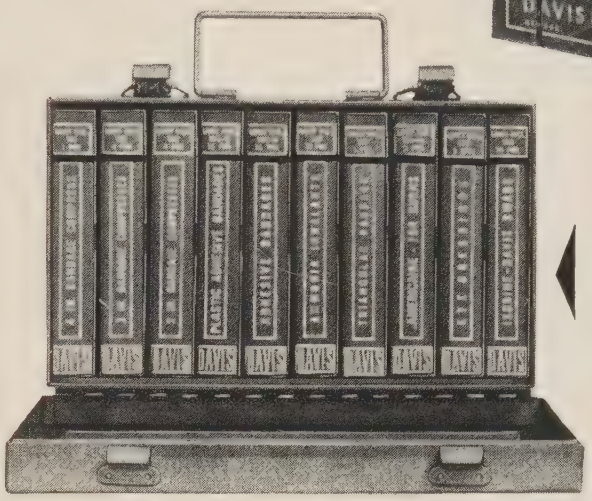
Procter & Gamble has announced that the cellulose pulp mill of its Memphis subsidiary, The Buckeye Cotton Oil Company, has set a new safety record in the pulp industry. The pulp mill's 653 employees have worked since August, 1953 without an accident serious enough to cause loss of time from work. The mill has exceeded by a considerable margin the previous pulp industry record of 2,612,656 accident-free hours.

Other P&G's records are held by: the Chicago soap factory, which ran up 3,745,369 safe man-hours between 1949 and 1952 to take top place in the soap and related products industry; The Buckeye Cotton Oil Company's Hollywood mill in Memphis, which set a fats and oils industry record this year by exceeding 1,634,068 safe man-hours; and The P&G Defense Corporation's shell-loading plant, an ordnance installation operated for the government at Milan, Tenn., which won the top spot in its field last March by exceeding 6,000,000 safe hours of operations.

Executive Vice President Walter L. Lingle, Jr., attributes P&G's success as a four-industry safety winner to the fact that safety is a

NOW! REDESIGNED DAVIS D-CARTONS IN SEALED, SANITARY WRAP, WITH EASY-TO-OPEN RED PULL TAB!

Just pull the red tab to unwrap.

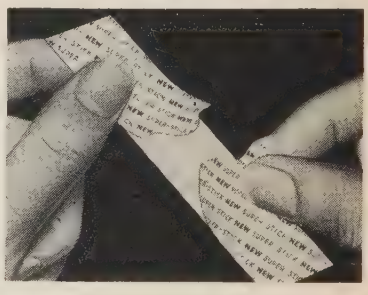


The continuous red line across the face of the D-Carton shows that none of the cartons has been opened.

A break in the red line, as at the third carton in the illustration, signals that they have been opened and should be checked for replacement before the contents have been used up.

BAND-AID
Trade Mark

Plastic Strips with "Super-Stick" now available in Davis D-Cartons and kits when desired with these advantages: (1) a new cushion pad of Red Cross cotton covered with surgical gauze; (2) all four edges of gauze are folded under, free from loose threads, and (3) handy new tab lift, shown at right. Fingers never touch pad.



SAFETY DAVIS DIVISION

DAVIS EMERGENCY EQUIPMENT CO., INC.

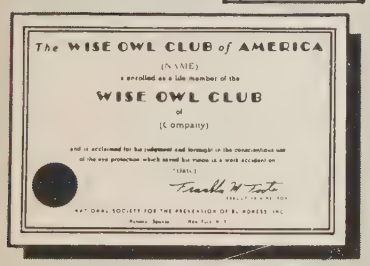
64 HALLECK STREET NEWARK 4, N. J.

(For details, use Key # M-22 on card on page 71)

SELL SAFETY THRU INCENTIVES

Encourage teamwork with individual and departmental awards. As everyone in department or plant reach million (or ½ or ¼) accident-free man hours, present fine quality awards, personalized with your own company emblem. Make every one "HIS BROTHER'S KEEPER".

FREE DESIGN SERVICE
JUST SEND US YOUR TRADEMARK.



WISE OWL CLUB
MEMBERSHIP CARD
& EMBLEM

SEND FOR FREE
ILLUSTRATED CASE HISTORIES

Award Incentives, Inc.
200 William St., N. Y. 38, N. Y.
Chicago • Los Angeles • San Francisco

(Use Key # M-23 on Card on page 71)

basic company policy, "It has been a basic operating principle that no operation can be declared successful unless it can be handled safely."

According to Safety Director J. R. Bollman, the company's machines and processes are designed originally with safety in mind. Blueprints and designs for new equipment are subject to Safety Department approval, and safety engineers also make a comprehensive, pre-run survey of the finished production line.

Carefully indoctrinated when they are employed and constantly updated on safe practices by safety engineers and supervisory and employee safety committees, employees take a keen interest in inter-plant and intra-plant competitions for safety awards, Mr. Bollman says, and have now crowned their efforts with top records in each of P&G's industrial fields.

• • •

A record of more than one million man-hours without a disabling injury to any of its employees has earned for the Sutherland Paper Co. at Kalamazoo the coveted Directors' Safety Award of the Folding Paper Box Association, it has been announced by Dennis Triplett, the Association's safety director.

"The Directors' Safety Award is the Association's most esteemed award," Triplett said. "In order for a member company to merit this citation, it must work more than one-million man-hours or five years without a disabling injury."

• • •

Last year Federal job injuries hit an all-time low, the United States Department of Labor has reported. Uncle Sam's civilian employees suffered 7.7 disabling injuries per million man-hours worked, compared with another record low of 11.5 for employees of private manufacturing plants. The Federal injury frequency rate also shows a 21 percent reduction from 1945 when strong efforts were initiated to improve the Government's safety program.

Federal employees last year suffered a total of 37,974 disabling injuries, 1,982 fewer than in 1953. There were also 191 job-connected deaths, 22 less than during the previous year.

Major causes of disabling injury last year were materials handling, 28 percent; falls, 21.8 percent; and striking against materials or equipment, 7.4 percent. The chief cause of death, however, continued to be from motor vehicles.

The Federal Safety Council is housed in the Labor Department and is composed of representatives of each Federal Department and agency in Washington. To reach the field where job injuries occur, it operates through 95 field councils in 44 States, Alaska, Hawaii, Canal Zone and the Marianas.

• • •

Eleven associations which did outstanding work in preventing occupational accidents during 1954 were cited at the 43rd National Safety Congress and Exposition in Chicago.

They received the National Safety Council's Association Award from David L. Arm, manager of the Council's industrial department, at a special luncheon meeting for association executives and volunteer officers. The 11 member associations are: American Association of Oilwell Drilling Contractors, American Gas Association, Can Manufacturing Institute, Malleable Founders' Society, Manufacturing Chemists' Association, National Association of Refrigerated Warehouses, Pacific Coast Association of Pulp and Paper Manufacturers, Portland Cement Association, Pressed Metal Institute, Society of Exploration Geophysicists, and United States Brewers Foundation.

The Association Award recognizes the general excellence of association safety services, particularly for their contribution to the reduction of work injuries in small firms. Safety activities such as publicity, safety conferences, contests and the publication of technical materials were taken into consideration by the committee of judges.

Disaster Conference

A working conference for the analysis of experience gained during the August and October Hurricane-Flood-Disasters in the northeastern states is being held in New York City on December 5th and 6th. Off-the-record discussions will consider problems, faults, handicaps and other data in an attempt to assemble information which will be useful to communities and industry in formulating disaster plans.

Leaders in civil defense and industry who suffered from these disasters are invited to participate in this conference, as well as others who assisted with support activities. As far as facilities permit, other interested observers may attend.

There will be no speeches in order that all of our time may be devoted to free discussion among those best qualified to discuss these matters. The agenda will cover pertinent phases of disaster and support operations.

The first day will be devoted to "Disaster and Industry" and will include: effects of disasters on industrial plants, their employees and the continuity of production and business; disaster planning and its effectiveness; utilization of employees, community and governmental resources and facilities during disaster and post-disaster stages; finances for the company and employees; communications and public information, and other problems.

Discussion Theme

The discussion on the second day will have as its theme "Disaster and the Community—Civil Defense in Operation," and will cover: the impact of sudden disaster and the ability of civil defense, the community and its industries to cope with it; operational weaknesses and strengths; communications and public information; full utilization of community resources and facilities; effective use and integration of support facilities and personnel; profiting by disaster experiences.

Further details are available from: Civil Defense Research Associates, Inc., The Industrial Security Institute, 475 5th Ave., New York 17, N. Y.

ALCO-LITE aluminum ladders are Safer-Longer!

A QUARTER CENTURY OF USE

25 years ago the first aluminum ladder was bought by the New Kensington, Pa. Fire Department. After 13 years of fire fighting and 12 years of general duty, without a single repair, this ALCO-LITE Aluminum Ladder is still in excellent condition.

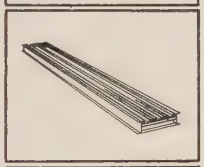
1 because they're aluminum

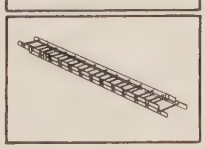
ALCO-LITE Ladders are made of lightweight, high tensile strength aluminum alloy. They are approximately twice as light and strong as similar ladders made of wood. You will find them easier to lift — easier to carry — easier to use. They will never rust, rot, splinter, spark or burn. ALCO-LITE Aluminum Ladders require almost no maintenance.

2 because they're ALCO-LITE

ALUMINUM LADDER CO. WORTHINGTON, PA. ALCO-LITE ORIGINAL MANUFACTURER OF ALUMINUM LADDERS PAT. NOS. 2121471-2040977 OTHER PATS. PENDING

This nameplate is your assurance of having an aluminum ladder that will withstand the hardest industrial use. Exclusive ALCO-LITE design and construction make it perform better — safer — longer. Every ladder more than meets the rigid code and tests of the ASA and Metal Ladders Association.





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Please send me Catalog No. 6 showing complete line of ALCO-LITE Aluminum Ladders.

NAME _____

COMPANY _____

ADDRESS _____

CITY _____ STATE _____

(For details, use Key # M-24 on card on page 71)

Ebasco Safety Meeting

Over 150 operating, personnel and safety representatives attended the 17th annual safety meeting sponsored by Ebasco Services Incorporated for client companies. The meeting was held at the Sheraton-Blackstone Hotel, Chicago, October 17–21, in conjunction with the National Safety Congress.

F. C. Gardner, president of Ebasco, opened the three-day meeting with a welcome to the delegates. He noted that almost all of the companies had made substantial improvement in their safety records over the past several years and that this year's meeting was planned to bring out other approaches by which these records could be further improved. After Mr. Gardner's talk, announcements concerning the meeting were made by

W. T. Rogers, Ebasco safety director and general chairman.

This year's theme, "Extending the Gains You've Made," was the topic of the opening session, presented by Dr. Walter Cutter, Assistant Director of the Center for Safety Education of New York University. The gains which have been made as well as future gains, said Dr. Cutter, depend on certain fundamentals: Management leadership and support; organization of the accident prevention program and its promotion; the proper selection and placement of new men; the building of an effective work force; the provision of proper work conditions equipment and facilities; and continuous inspection and follow-up. To these fundamentals must be added the conviction of each man that safety in the company depends on him, that he is necessary in any advance.

Praise Effectiveness

As in previous years, delegates were enthusiastic in praising the effectiveness of the meeting in providing new ideas and techniques which they will be able to use in their safety programs to extend the gains already made.

N. Y. Safety Convention

New York's Twenty-sixth annual Safety Convention and Exposition will be held April 16–20, 1956 at the Hotel Statler, according to an announcement by George E. Decker, Chairman of the convention interim committee of the Greater New York Safety Council.

Sponsoring Groups

The event, which has drawn annually more than 10,000 accident-prevention workers from all parts of the nation, is sponsored by the Greater New York Safety Council with the Cooperation of more than seventy national and local agencies, including six departments of the New York City governments, the Army, Navy, Atomic Energy Commission, Red Cross and Business and Professional Organizations.

N. Y. Code for Window Cleaners

New York State's revised worker-safety regulations protecting window cleaners became effective December 1, it was announced by Admiral William S. Maxwell (U.S.N., retired), chairman of the Board of Standards and Appeals. The regulations are embodied in Industrial Code Rule #21.

"The new regulations, which the State Labor Department will enforce, will provide greater safety for workers in this high-hazard industry," Admiral Maxwell declared. "It should also eliminate many of the 600 requests for variations from provisions of the former rule, which the Board has received during an average year."

Changes in the code rule include: Permitting the choice of using anchors and belts, or ladders, or scaffolds, or bosun chairs; restricting metals for safety belt fittings and safety anchors to a choice of four alloys considered by experts to be best for the purpose; adding a detailed specification for fabrication and heat treatment of forgings.

Safety Booklets

A new approach to encouraging safety in industrial plants and in small businesses has been incorporated in three new booklets released by the accident prevention department of the Association of Casualty and Surety Companies. The booklets have been prepared in the currently popular comic-book fashion using full color drawings and a story presentation of the safety message. The first of the booklets, "Keeping Safe Off the Job," is suitable for use with employees in any job classification.

A second booklet, "A Safe Beauty Shop," deals with many of the safety problems peculiar to beauty shop operators and employees. The same principles contained in the booklet may be applied to barber shops and other similar businesses. The third booklet, "A Safe Start," is intended to acquaint new employees in industrial plants with safe work methods.

Each booklet is available at cost, $2.70 per hundred, and may be obtained by writing the Association of Casualty and Surety Companies, 60 John Street, New York 38, New York.

Successful Safety Selling

(Continued from page 24)

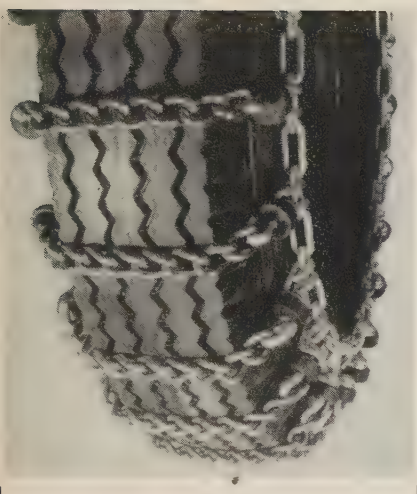
Safety demands good housekeeping in a plant producing such a wide line, and a continuous and well-organized program keeps clear all floors and walking surfaces. Efficient fan and ventilation systems minimize the dust problem wherever possible. Certain jobs, including abrasive and grinding operations, the periodic cleaning of the top of the plant's new 75-ton capacity electric furnace, and blowing out electric motors, require use of respiratory protective equipment.

For protection against dust and steel particles, the company provides a new respirator, compact, exceptionally light in weight, and easy to clean and sterilize. A formable aluminum face-piece permits the wearer to mold it to his face. Dust removal is complete with the respirator, although there is scant resistance to breathing. Goggles may be worn easily with the respirator, which also is adaptable for close-up work in confined areas.

"We have found that the workers greatly appreciate our concern for their comfort and welfare in providing respirators and other safety equipment, even though they might not be absolutely necessary," says Mr. Vandeventer.

Safety is a round-the-clock, round-the-calendar concern at Atlantic Steel. Employes are so reminded by colorful signs and displays to be seen everywhere about the plant. Regular safety meetings are held in each department every week. At many of these meetings, the message is driven home by safety skits in which the employes themselves perform.

Pictures by courtesy of Mine Safety Appliances Co.



RUBBER-CUSHIONED CHAIN

A new rubber-cushioned tire chain featuring snap-on, snap-off cross chains has been announced by The Thomas Company of Minneapolis, manufacturers and distributors of specialty products to the highway, construction and industrial fields. Called the Ruggo Tire Chain, the rubber-cushioned, double-traction, triple-wearing tire chain fits any heavy duty vehicle.

The chains feature an exclusive rubber roller assembly. The rubber roller acts as a cushion for the chain, prevents damage to the tire, and holds the cross chain on the hook. Resiliency of the rubber roller permits easy removal of the cross chain, even when on the tire. It won't damage fenders or break on the pavement in case the cross chain breaks.

Only seconds are needed to install or remove the cross chains on the tire chains.

The cross chains snap on and off without tools, alternately turn, then dig in for more traction, and turn automatically for more mileage with less breakage. They are available in two sizes: Regular 7/0 (5/16") and Extra Heavy 9/0 (3/8"). Cross Chains are available with side chains, separately, or with rubber roller assemblies.

For further details, use key number TS-21 on inquiry card on page 71.

SOME NEW IDEAS
from the National Safety Congress

One of every two new cars sold is in a serious accident at some time during its life.

Safety experts at the National Safety Congress spent 5 days of jam-packed sessions trying to find out why. Public officials and traffic men discussed all phases of highway safety—from design factors in car manufacture to road construction, law enforcement and crash injury reports.

U. S. railroads were cited for excellent records in passenger and employee safety before the Congress. Carroll R. Harding, president of the Pullman Co., pointed out that American railroads had one of their safest years in 1954. He quoted figures showing that passenger fatalities were reduced to 21 during the year. This was at the rate of .07 per 100 million passenger-miles, a reduction of 50 percent from 1953. Injuries to passengers decreased 12 percent in the same period. Employee fatalities dropped 32 percent under a previous low established in 1953.

A master traffic plan instead of hit-or-miss methods is necessary if cities are going to cure one of their biggest headaches—traffic accidents and congestion.

That was the warning of D. Grant Mickle, director of the traffic engineering division of the Automotive Safety Foundation. He spoke in response to the ninth annual David Beecroft Memorial Award, conferred upon him by the Society of Automotive Engineers for distinguished contributions to traffic safety.

"The master street plan must be integrated with over-all city planning," insisted Mr. Mickle, "since traffic is a circulatory system necessary to the location and the mutual relations of the varied community activities. The plan can exert a powerful influence in defining neighborhoods, stabilizing land values, controlling abnormal decentralization and rectifying the jumbled land uses that have generated so many of the city's headaches.

"The highway is not merely a a device to permit movement; it is a productive facility. Most cities spend only a fraction as much directly on traffic accident prevention as on fire protection. Yet in monetary terms—as well as in total lives lost annually—traffic accidents are a vastly greater menace. Scattered responsibilities, split authority and scrambled organization seem to be characteristic of this vital phase of public administration. In the case of the older municipal services, such as water supply, welfare and public works, unity of the managerial structure and centralized authority are provided for in the city charter. Few cities have given charter recognition to street and traffic administration."

The need for a master plan and centralized control and authority is revealed by factual studies which have exploded many of the myths of hit-or-miss traffic planning, declared Mr. Mickle. He said, for example, that it had been commonly believed that most traffic approaching on main rural roads

wants to avoid cities. Origin and destination surveys disproved this. It had been assumed that most of the traffic entering cities was headed for the central business district. Studies showed that up to 50 percent of the downtown volume was merely passing through. Street widening has been thought to be a cure-all for congestion. Research found that the real bottleneck is the intersection, and that the same benefits from expensive widening could have been obtained by parking prohibitions.

In a look at the future, Mr. Mickle said, "in the history of the American republic a good many things have looked hopeless, yet we have won through. In the traffic field, too, there are examples of impressive victories won by American energy and ingenuity."

The first step in any program of accident prevention is to get employees to think safely, and the best way to promote this attitude is by personal contact, according to W. T. Couch, safety engineer of Couch Motor Lines, Inc.

Mr. Couch said that in New Orleans 16 drivers were responsible for 50 preventable accidents in one year. He said this rate was reduced to less than 1 accident per month after personally talking to the men and holding weekly safety meetings. In another city, he said the accident rate was 2 per month. After 3 years, the rate was reduced to less than 4 accidents per year.

"Their driving skill was not changed," exclaimed Mr. Couch, "Their attitude was."

"Driver training is the aspirin that gives immediate relief while we develop fundamental cures," declared D. A. Weaver, of the Public Safety Institute of Purdue University, Lafayette, Ind., in a later discussion of safe truck fleet operation.

"We forget that even expert drivers can benefit from quite simple training procedures. It takes time to develop an adequate selection procedure, to build records that define sore spots, to improve supervision and management and to train supervisory personnel in all the little details that add up to safety," Mr. Weaver said. "But driver training we can start tomorrow."

North Carolina Convention

S. H. Mitchell, president of Hennis Freight Lines, Winston-Salem, was elected president of the North Carolina Motor Carriers Association, during the 26th Anniversary Convention. In keynoting the convention, Governor Luther H. Hodges warmly praised the trucking industry for their successful efforts in highway safety. He said NCMCA safety programs have been "effectively administered."

Three trucking firms were honored for their State truck roadeo achievements. On behalf of NCMCA, C. Jack Williams, first vice-president of the American Trucking Associations, Inc., presented engraved placques to: Pilot Freight Carriers, Inc., Winston-Salem; Roadway Express, Inc., Durham; and Great Southern Trucking Co., Inc., Charlotte.

Better Driver Training

Three hundred and fifty-four million man days of work, or enough manpower to build nine six-lane expressways from coast to coast, will be lost as a result of this year's traffic fatalities, according to Alfred L. Moseley, consulting psychologist for the Institute For Safer Living.

Mr. Moseley has revealed data from studies which indicate that the beginning driver has a longer life expectancy if he or she is trained by a professional driving instructor. In a recent survey of several hundred accidents by beginning drivers, he said that the accident frequency among those trained by parents or other non-professional instructors was nearly three times as high as among those who had the benefit of professional instruction.

"Today's professional driving instructor is not without criticism however," Mr. Moseley said. He urged that more emphasis be placed on the safety aspects of driving as well as the use of clearer and more direct phraseology in verbal instructions to beginners. He called for a stepped-up program of training in meeting ordinary highway emergencies such as blowouts and skids. "Motorists," he said, "may have only one blowout in a lifetime, but all too often it occurs during the last moments of life."

"The average driver faces at least one near-accident for every 100 miles of travel. Proper basic training can go a long way toward eliminating these near misses, which sooner or later turn into the real thing," Moseley asserted.

He also urged the adoption of a standard code of signals between drivers, one of the principal forms being a set of horn blasts similar to those used by railroad trainmen.

How Do You Look at an Accident?

These problems test your ability to judge accident responsibility based on modern defensive driving techniques. They have been devised by Donald S. Buck, safety director, U. S. Army Transportation Corps. Assume that each report is based on a true accident; that each driver's statement is true and complete as given. Decide in each case whether the driver caused the accident or was victim. Remember that you are not deciding who is at fault.

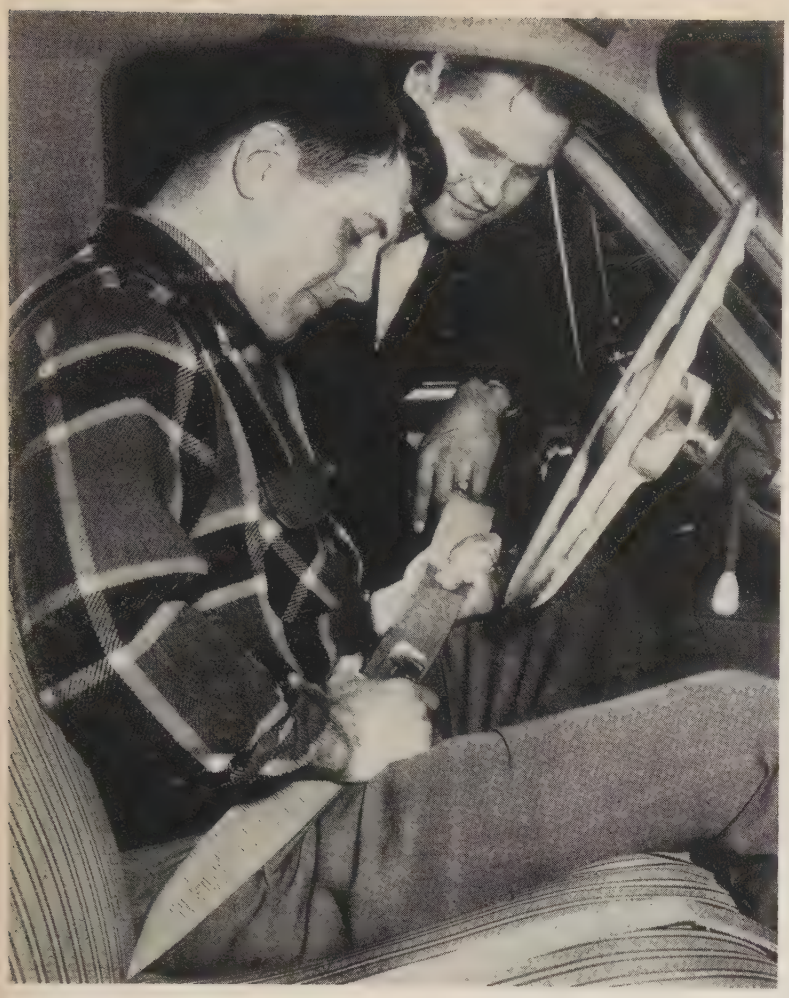
(Answers on page 76)

Case No. 13—Driver's Statement

"Since our state is pretty hard on drunken driving, I went to this party and actually drank only two beers—and not another drop! I had nothing at all to drink during the last half-hour before I started home. I started to pass a slow moving vehicle, when it slowed suddenly, because I barely nicked him as I went around. Immediately the police gave me a drunkometer test, checked my story and cleared me."

Case No. 14—Driver's Statement

"I'm following this big truck on a 2-lane road. I pulled up about 10 feet behind him (he was crawling along about 20 mph on a 55 mph road). I started to ease out to see if the way was clear to pass, but this other car, coming towards me like the wind, clipped my left front fender before I have a chance to get back. The slow moving truck obstructed my view, and this other car was going too fast. It was legal to pass here."



Safety Belts for Us!

. . . and here's why

This year's auto safety campaign, promoted and publicized by the AAA and leading automobile manufacturers, stresses "built-in" safety devices to reduce injuries and fatalities.

Far out in front in "safety-consciousness" is Ansul Chemical Company, of Marinette, Wisconsin, which for several years has protected its men by installing safety belts in all company-owned cars. This precautionary measure is a natural step taken by a company whose business is somewhat allied to safety in that the company produces and sells dry chemical fire fighting equipment, refrigeration protective devices and industrial chemicals. Ansul's precautions have proved themselves in terms of lives saved and property damage kept to a minimum, because drivers were able to "stay put" and control their cars.

Last year company cars were driven 1.5 million road miles, and were involved in only seven serious accidents. All but one man escaped uninjured or with minor abrasions. The seventh man, **who was not wearing his safety belt**, was hurled halfway out of his car and dragged along the highway. He died several hours later in a hospital.

Driver	Type of Accident	Automobile Damage	Personal Injury	Present Condition of driver
a sales manager	Head-on collision	(not listed)	Blow on head	Fully recovered
company salesman	Out-of-control collision	$700	None	
sales-service representative	Sideswiped by second car; hit ditch and rolled over	$1,250	Two slightly bruised knees	Fully recovered
company salesman	Skidded into ditch and large boulder	$264	None	
company salesman	Skidded on icy curve	$288	None	
a sales manager	Out-of-control, crashed guard rail	$350	None	
company salesman	Head-on collision	(not listed)	Hurled from car; dragged along roadway	KILLED

The Ansul Company for years has had a safe-driving training program; has preached caution, courtesy and common sense to its drivers on the highways—but has equipped its cars, nevertheless, with automobile safety belts similar to those used by airlines, as an extra precaution.

Ansul chose a belt, which has been approved by the Civil Aeronautics Authority. This type was chosen after considerable experiment and testing of all available types. Although they found that a

(Continued from preceding page)

greater measure of safety was afforded by the harness type, which fastens around the waist and shoulders, it could become cumbersome and uncomfortable on long drives required of some men. So company officials installed the more practical device that belts around the waist of the driver and front seat passenger from a secure anchorage to the car frame itself.

The secret of auto safety belt protection lies in counteracting results of rapid deceleration—recently tested with dramatic effect by motor car manufacturers and independent research groups. The belt holds the driver securely in the "safety island" in the center of the car. When the car stops abruptly, as in a head-on-collision, the driver is restrained from continuing forward at the car's rapid speed. Thus, impact energy is absorbed, and bodily injury held to a minimum.

The preceding statistics of the seven accidents involving Ansul cars last year provide unmistakable proof of the worth of its safety program. The first six men listed in the table were guarded by safety belts; the seventh was **not**.

For the Technically Minded:

1. A head-on collision is less likely to injure anyone inside the automobile, if the driver or passenger is anchored into his seat. The interior of the car is like a suit of armor around the driver. However, when someone is thrown about inside the car or hurled against objects outside the car, injuries and often fatalities occur. Hence the safety devices.

2. Without safety devices for protection, this is what may happen in an automobile accident:

A vehicle collides with a solid fixed object at 30 miles per hour. The car, let us say, is crushed in a distance of two feet.

The car's speed has decelerated from 30 miles per hour to zero in two feet, representing a deceleration rate of 483 feet per second. Such deceleration is 15 times the acceleration of gravity (32.2 feet per second).

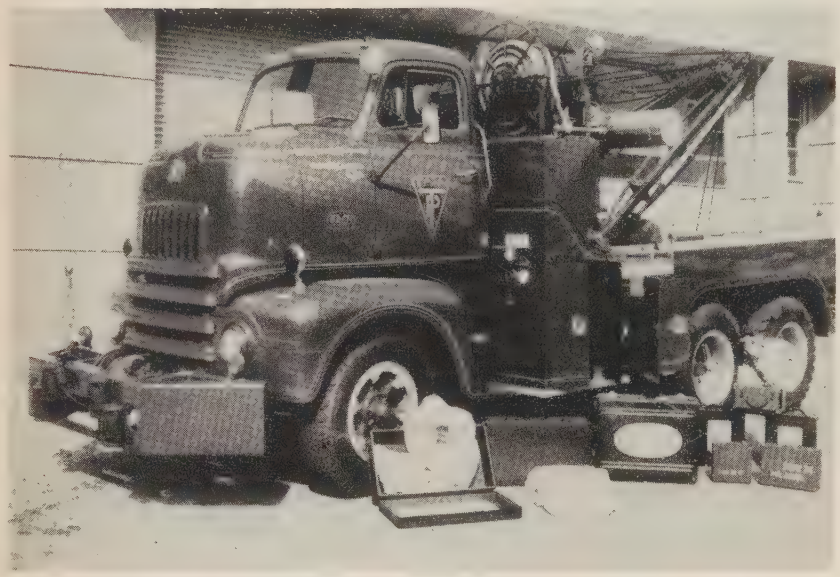
Therefore we say the vehicle suffered a 15 G crash (15 times gravity).

At the moment of impact the driver has the same forward speed as the vehicle. As the vehicle stops he continues forward at almost the same speed of 30 miles per hour, colliding with the dash and windshield.

Assuming the combined crushing of the body and vehicle interior will reduce his velocity to zero in a distance of two inches, he will suffer a deceleration of almost 5,700 feet per second, or 176 G.

Although the driver may survive without injury the 15 G crash of the vehicle, he cannot escape injury or death from the 176 G crash of his body against the interior.

3. With a safety device which keeps the driver in place at the moment of collision, impact energy is absorbed by the car exterior and the driver is spared injury by the "protective armor" he wears.



Wrecker . . . rescue car . . . fire truck all rolled into one

Motorists driving over the new West Virginia Turnpike are assured of ample protection when traversing the lone tunnel on the 88-mile stretch of superhighway. This tunnel, extending less than a mile through the mountain between Paint Creek and Cabin Creek in Kanawha County, is protected by a truck with three-fold duties.

The truck serves as wrecker, rescue car and fire truck for the tunnel. As a wrecker the truck has sufficient power to pull the largest tractor-trailer out of the tunnel, even if its wheels are locked or smashed. The truck's removal apparatus consists of a front-mounted reel and an extra heavy wrecking hoist on the rear.

Fire fighting equipment includes a 500-gallon tank mounted to the rear of the cab and connected to two sweep fog nozzles on the front bumper and two booster assemblies located on either side. The front-mounted nozzles enable the truck to flush combustibles, such as burning oil, in front of it as it moves through the tunnel. Several hand fire extinguishers also are carried in truck compartments.

As a rescue car, the truck is equipped to render first aid on the spot in any emergency. Its first aid supplies include a stretcher outfit, two asbestos blankets, one burn-treatment kit for burns, a first aid kit and a pneolator.

Personal protection of the men assigned as fire fighters includes two all service gas masks and two asbestos suits.

The all service masks provide respiratory protection in the Turnpike tunnel against toxic dusts, mists, fumes, smokes and fogs including carbon monoxide which could accumulate during an emergency.

All supplies required for emergency treatment of burns are contained in the portable, waterproof burn spray kit. A spray gun makes application to any burned area easy and quick, alleviating pain and aiding in control of shock. Compresses, bandages, ammonia inhalants and other supplies necessary in the treatment of burns are also contained in the kit.

The pneolator is a self-contained automatic artificial respiration instrument which is in wide use throughout the country. It inflates the lungs of a patient and then permits exhalation by the natural recoil of chest and diaphragm, thus following a natural breathing pattern. After establishing natural breathing, the apparatus also serves as an inhalator to supply oxygen to the patient.

The truck with three-fold duties is prepared to handle all emergencies at the mile long tunnel.

Picture by courtesy of Mine Safety Appliances Co.

WHAT'S THE LAW?

Edited by HENRY M. GROSMAN
Counselor at Law, Newark, N. J.

MEMBER . . . . . .
Master Superior Court, New Jersey
American Bar Ass'n, New Jersey Bar Ass'n,
Chairman, Committee on Workmen's
Compensation, New Jersey Bar Ass'n
National Federation Insurance Counsel
Past Commander, American Legion, Post 10,
. . . . . Newark, N. J.

EYE INJURY—Protection Lacking?

An employee who received injuries in both of her eyes was awarded a disability of 75 percent because the employer failed to comply with the statute requiring that protection be furnished in hazardous employment. The court stated clearly that the petitioner was engaged in a hazardous employment and, therefore, the employer should have furnished the employee with the proper safeguard.

LUPER TRANSPORTATION CO. VS. BRAMLETT, Oklahoma Supreme Court. No. 36421, March 29, 1955.

RETINA DETACHED—Accident?

An employee suffered a retinal detachment when he was hit in the eye with a piece of concrete. A steel railroad coupler fell and apparently dislodged the concrete chip. He was awarded damages of $44,200, on the ground that his employer was negligent in permitting the haphazard high piling of the couplers upon a concrete surface and in sending the employee to move them.

The Appellate Court affirmed the award, holding that the evidence substantially supported the jury's conclusions that the falling of the coupler caused the blow to the employee's eye, and the damage the blow inflicted was proximately caused by the employer's negligence.

KAHN VS. SOUTHERN PACIFIC CO., California District Court of Appeals, Third District No. 8582—April 19, 1955.

SLIP—Work Area Safe?

An employee was granted $20,000 for personal injuries he claimed to have sustained when he slipped and fell in an oily slick area in his employer's railroad yard. In reviewing the record of trial, the Appellate Court held that there was a substantial basis for the inference that the area in which the employee fell was oily, slick, not lighted, and not reasonably safe for employees to step and walk upon.

HUFFMAN VS. TERMINAL RAILROAD ASSOCIATION, Missouri Supreme Court. No. 44,492. July 11, 1955.

ENGAGEMENT IN COMMERCE Evidence?

In an action under the Federal Employers' Liability act, a railroad bridge tender was granted a judgment for injuries from a fall from an improvised bridge which he had constructed and used to get to and

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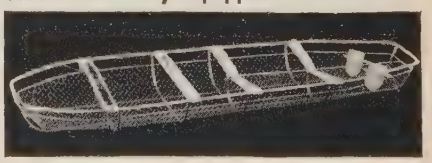

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(Use Key # M-25 on Inquiry Card on page 71)

off the railroad bridge. The evidence was sufficient to sustain the finding that the railroad was negligent in not providing guard rails and lights for the bridge. The Court held also that the evidence disclosed the improvised bridge to have been in use for some time, with the railroad aware of the fact and apparently acquiescing in it.

MARTIN VS. BLACK, United States Court of Appeals, Fifth Circuit, No. 15,189 April 27, 1955. Appeal from U. S. District Court for the Southern District of Florida.

The cases above are all examples of large awards which the employer could have prevented by using the proper safety equipment and taking the proper precautions.

NEGLIGENCE—Causal and Contributory

In an action under the Federal Employers' Liability Act, a railroad motion to set aside an $80,000 verdict, or for a new judgment notwithstanding the verdict, was denied by the court. It ruled that there was sufficient proof that the failure of the railroad to provide the deceased employee with a safe place to work and/or safe equipment with which to work was the most important reason for his death. The employee met his death when a sand bucket which he operated crushed him when he was in a pit oiling the track on which the bucket ran. The $100,000 verdict in favor of the decedent's wife and children was reduced to $80,000 when the jury found the decedent to be 20 percent contributorily negligent.

THOMAS V. CONEMAUGH V. BLACK LICK RAILROAD, United States District Court, Western District of Pennsylvania. No. 12,585, July 28, 1955.

Under the Federal Employer's Liability Act, a workman must prove his employer's negligence, and in this case, the employer, not providing a safe place to work or safe equipment with which to work, was held to be negligent in the workman's death.

Fire Control Standards

Three new and revised fire safety standards applying to spray finishing using flammable materials, tank trucks for flammable liquids, and storage and handling of liquefied petroleum gases have been published by the National Fire Protection Association. Each of the standards is available in pamphlet form from the NFPA, 60 Batterymarch St., Boston.

The Standards, by numerical designation, title and price, are: No. 33—Spray Finishing Using Flammable Materials (30 pgs) 35¢; No. 385 — Recommended Regulatory Standard for Tank Vehicles for Flammable Liquids (18 pgs) 35¢; No. 58—Standards for the Storage and Handling of Liquefied Petroleum Gases (78 pgs) 35¢.

Code for Flame-Resistant Paper and Paperboard

A Recommended Commercial Standard for Flame-Resistant Paper and Paperboard was circulated to the industry for acceptance under date of October 13, 1955, according to an announcement by the Commodity Standards Division of the U. S. Department of Commerce.

The standard was proposed by a group of paper manufacturers, and has been adjusted in accordance with the comment of other interests. It provides a method of testing and rating the flame resistance of all types of paper and paperboard, not over 0.020" thick, that have been treated to prevent the spread of flame when ignited; and a means for identification of quality. By adherence to this standard, it is believed that manufacturers, distributors, and users will be able to effect a reduction in the danger from personal injury and loss of property.

The Recommended Commercial Standard is identified by the designation TS-5282. Copies may be obtained while the supply lasts by addressing a request to H. A. Bonnet, Commodity Standards Division, U. S. Department of Commerce, Washington 25, D. C.

Canadian Fire Code

Publication of a uniform fire prevention code for use throughout Canada is announced by the Dominion Board of Insurance Underwriters. While the code has no legal standing until and unless it is adopted for specific use by Provincial Governments or municipal administrations, it contains a suggested ordinance for adopting the code and establishing a Bureau of Fire Prevention.

While many communities are extremely active in fire prevention work, the effectiveness of such activities is seriously hampered because of the lack of suitable laws, ordinances and regulations. A properly designed fire prevention code provides for these requirements and also the necessary authority for fire departments to make inspections and enforce regulatory measures.

The adoption of the suggested Fire Prevention Code, in its original form, or after adaption required to meet local conditions, represents a definite step forward in the protection of life and property. The code prescribes minimum regulations governing the fire-hazardous conditions and serves

a dual purpose. Its requirements aid in educating a user in the safe handling of hazardous materials and equipment, and the code also permits the community to exercise proper authority in keeping hazards under adequate control and to prohibit extra-hazardous occupancies within closely built and high value areas.

There has been no uniform fire prevention code until now in Canada. The new code is based on the recommended fire prevention code promulgated and published by the National Board of Fire Underwriters in the United States, but it has been specially adapted to meet Canadian requirements. In adapting the suggested code to meet the needs of a community, some changes, additions, and omissions may be required.

Copies of the suggested fire prevention code may be obtained free of charge from the Dominion Board of Insurance Underwriters, 460 St. John Street, Montreal, Quebec.

National Fire Code

The National Fire Codes, a compilation of 172 fire safety standards as developed by the National Fire Protection Association, have been published in a revised six-volume 1955 edition.

First issued in 1938, each volume of the National Fire Codes has been periodically revised and expanded. There are a total of 43 changes in the 1955 volumes incorporating all of the new and revised fire safety standards adopted at the 1955 NFPA annual meeting and all amendments approved up to July 30, 1955.

Fields covered by the six volumes are: Vol. I—Flammable Liquids and Gases; Vol. II—Combustible Solids, Dusts, Chemicals and Explosives; Vol. III—Building Construction and Equipment; Vol. IV—Extinguishing Equipment; Vol. V—National Electrical Code and other electrical standards; Vol. VI—Transportation.

The Codes and the NFPA standards they contain are intended to provide guidance for achieving reasonable safety to life and property, yet avoid provisions involving inconvenience and expense not essential to the objective of practical fire safety.

The National Fire Codes, six dollars per volume, may be obtained from the Publications Department, National Fire Protection Association, 60 Batterymarch Street, Boston 10, Mass.

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(For details, use Key # M-26 on card on page 71)

Restaurant Fires

Restaurant owners and employees must be especially careful of all flammable liquids used in and resulting from cooking—greases found on stoves, in deep fat fryers, in exhaust ducts and exhaust hoods—because these flammable liquids are the principal cause of fires in restaurants.

This is one of the findings in a special fire record study of restaurants, Fire Record Bulletin FR 55–5, just published by the National Fire Protection Association. The study is illustrated and gives paragraph summaries of fire in restaurants of varied size and structure.

The 12-page report also contains a tabulation of the recurring factors influencing fire-spread in the 62 fires summarized in this record. Copies may be obtained from the NFPA Publication Department, 60 Batterymarch St., Boston. Price is 50 cents per copy.

THE AMERICAN LADDER INSTITUTE, for the first time in its 25 year history, has elected as its president a manufacturer on the West Coast. *Paul Howard* of the Howard Mfg. Co. in Kent, Washington, will pilot the affairs of the national trade body for the coming year.

Other officers are: *Elmo Fay*, vice president; *J. K. Halderman*, treasurer; *W. A. Patterson*, secretary; *Pat Johnson*, trustee; and *W. A. Flint, Jr.*, chairman.

At *YORK CORPORATION J. K. Louden*, Vice President, Commercial Division, has announced the appointment of *R. E. Cassatt* as Manager Commercial Sales.

DOW CORNING CORPORATION, Midland, Michigan, has been named winner of the 1955 Award for Chemical Engineering Achievement. The company was selected to receive the award by an 84-man committee headed by Prof. Walter G. Whitman, director of the chemical engineering department of the Massachusetts Institute of Technology. The committee honored the company primarily for the successful participation of its chemical engineers in the commercial development of new products, markets and sales, and also recognized the contributions of its chemical engineers to silicone process research and development.

JOHNS-MANVILLE CORP. has appointed *C. George Dandrow* to the newly created post of Vice President for Customer Relations. In his new post, Mr. Dandrow will aid company divisions in sales of all J-M products to the utility, transportation, industrial and building construction fields as well as handle company trade relations activities.

A-P CONTROLS CORPORATION, of Milwaukee, has announced the appointment of *Mr. Duncan Henderson* to administrative assistant in charge of sales, a new post within the sales organization. Mr. Henderson will coordinate sales and service department activities at the home office.

At *EXIDE INDUSTRIAL DIV.* of The Electric Storage Battery Co., *Evans Taylor*, former Philadelphia branch sales engineer, has been named manager of sales engineering, it is announced by C. J. Moore, sales manager. He succeeds E. J. Fitzmaurice, Jr., who has been appointed Boston branch sales manager.

OSTER MANUFACTURING COMPANY, Cleveland, as of January 1, 1956, will market on an international basis, a line of multi-purpose, hand propelled, hand and battery-operated portable lifts with capacities up to 2000 lbs.

According to James C. Dangler, manager of Oster's Material Handling Division, Oster is planning to distribute predominantly through industrial supply distributors rather than material handling distributors, and in most cases be those industrial accounts who are presently handling Oster pipe and bolt threading machines.

WALTER KIDDE & CO., INC. has announced the acquisition of J. H. Scharff, Inc. (Orange, N. J.), and Mohawk Electrical Manufacturing Co. (East Orange, N. J.). Scharff fabricates and sells Atmo fire detection equipment and a spot fire detector while Mohawk manufactures a diversified line of electrical equipment for Scharff and other customers. Kidde formerly sold Atmo's fire detection equipment under license.

Product sales and distribution of the new, wholly owned subsidiaries will be supplemented by the national sales organization of Kidde's Industrial and Marine Division and Ultrasonic Division, all of which are under the direction of Paul W. Eberhardt, Vice President.

DePUY MANUFACTURING COMPANY, INC., Warsaw, Indiana, manufacturer of orthopedic appliances, announces the appointment of *Mr. J. K. Landis* as Sales Manager. Mr. Landis formerly held a similar position with Orthopedic Equipment Company, Bourbon, Indiana.

Mr. J. H. Webb, formerly DePuy Sales Manager has been promoted to the position of Assistant to the President.

FENWAL LABORATORIES, INC. has appointed *John G. Gibson, 2nd, M.D.*, as consultant in research according to an announcement by Francis A. Wandell, general manager. A staff member of the Department of Medicine of the Peter Bent Brigham Hospital and Harvard Medical School, he is also staff member of the Division of Industrial Corporation, Massachusetts Institute of Technology. He is the author of numerous articles on blood volume, shock, and blood preservation.

INDUSTRIAL WIPING CLOTH CO., INC. has announced the appointment of *Harry Block* as general manager. The company manufactures shop towels, which are distributed through nationwide Texel Service Industrial Launderers who rent them to plants throughout the country. Mr. Block brings with him a background of 9 years as textile converter with Mook Brothers, Inc., New York.

WYANDOTTE CHEMICALS CORP. has recently elected to the board of directors *Ford Ballantyne, Jr.*, Vice President and General Manager of The J. B. Ford Division. He joined Wyandotte Chemicals production staff in 1942, was elected a Vice President in 1950, and became General Manager of the Ford Division in 1953.

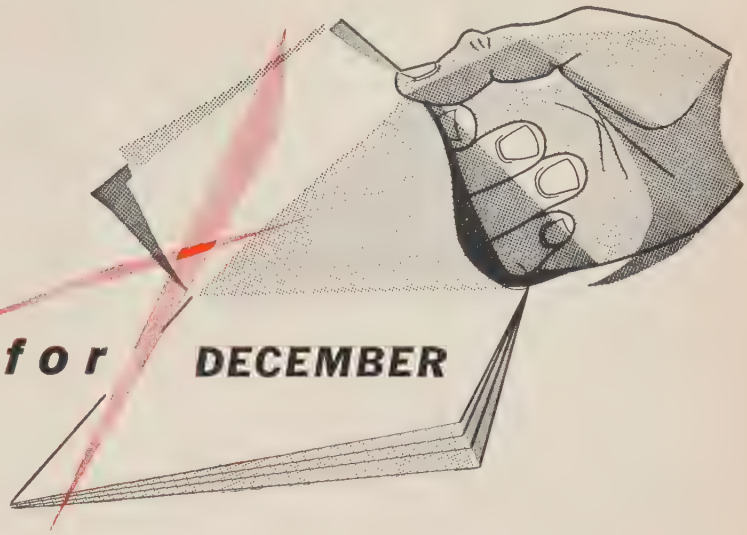
THE SAFE TREAD CO., INC., formerly located at 30 Vesey St., New York City, has moved its office headquarters to 45 N. Broad St., Ridgewood, N. J. The company's production of abrasive metal floor and stair treads has been greatly expanded in six foundries located in the eastern seaboard area.

Safety Appointments

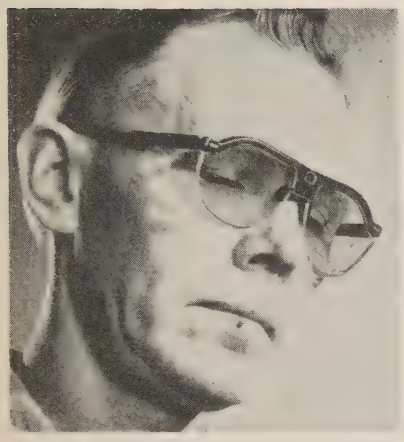
Harold W. Gilberg has been appointed Assistant Superintendent, Safety and Welfare Department at *JONES & LAUGHLIN STEEL CORPORATION'S* Aliquippa Works Division. He had been a Safety Inspector since February 16, 1947. Mr. Gilberg succeeds Charles P. Vorhes, who earlier was appointed Superintendent of Safety and Employment at J & L's Cleveland Works Division.

Material appearing in this section is published as information and is not intended to imply endorsement or guarantee by SAFETY MAINTENANCE.

To obtain descriptive literature of products listed, use Reader's Inquiry Card. Write in code number given each item. Send written requests to: Service Dept., SAFETY MAINTENANCE.



what's new for DECEMBER



ANTI-GLARE GOLD LENSES

(Use Key # 677 on Inquiry Card on page 71)

INTERCHANGEABLE, gold, methyl methacrylate lenses, recommended for inspection wear, are now available in Watchemoket "feather-light" Tuc-Away Safety Spectacle frames. Under close overhead lights, the gold lenses reduce eye fatigue and eye strain by softening glare and absorbing almost 100% of ultraviolet rays. At the same time, they make objects clearer by improving the contrast between black and white. The lenses are made of .080" thick shatterproof methacrylate and provide excellent protection against flying particles. The manufacturer states that Eye Saver methacrylate lenses resist damage from most chemicals, acid or alkaline, will not pit from grinding or welding sparks, and are optically perfect.

The lenses are cast, not molded, and require several days to treat in order to form a parallel molecular structure that pipes incident rays to the edge, not allowing these rays to pass through the lenses. The result is a clearer, finer, optically perfect lens which provides better vision without distortion. Gold lenses to fit Tuc-Away frames are available with either full side shield or full cup protection. The full side shields provide clear peripheral vision for bench work. Full cup lenses provide all around protection and are recommended for floor wear.

ROCKING RESUSCITATOR

(Use Key # 678 on Inquiry Card on page 71)

AN APPARATUS scientifically designed for correct administration of the "Eve" method of artificial respiration known as the Eaton Rocking Resuscitator is currently being marketed by American Products, Inc.

Basically, the Eaton Resuscitator is a precision device designed to rock the victim rhythmically to a definite degree of tilt and in approved sequence, providing ventilation, circulation and warmth. Among its many advantages are claimed extreme simplicity (group or individual training requires little time and is easily remembered); operation over long periods by one person, on any size patient is possible; the device may be used as an emergency table for first aid and is compact and readily portable. Many examples of successful use by public beaches, pools, industrial plants and mines, first aid stations and hospital emergency rooms are a matter of record. The entire unit including an extra supporting leg that forms an emergency first aid table, weighs only 22 pounds.

NON-DUST CONCRETE SEALER

(Use Key # 679 on Inquiry Card on page 71)

UNLESS PROPERLY sealed, a new concrete floor has a tendency to deposit alkaline salts on the surface as it cures—which results in surface powdering, called "dusting" or "bloom." Cem-Seal, a new one-coat product developed in the laboratories of Hillyard Chemical Co., forms a seal on the concrete surface to prevent deposits of alkaline salts. Dusting is eliminated. Holds moisture in the concrete to prolong the curing process to the full 28 days; results in a denser, harder surface that is extremely resistant to wear.

A new floor, so treated, can be opened to traffic in 4 hours, and used while the concrete is curing. The floor is protected from stains, discoloration, and penetration by grease, oil, water and dirt. It is also an effective primer or renewing agent for old concrete floors. It puts an end to dusting that has started, eliminates acid etching, and provides a firm, tight base for finishes such as paint, or finish coat.

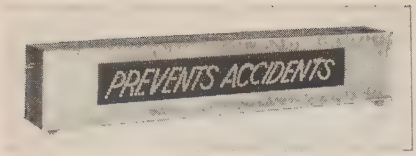
The one-coat application is simple—the big sheepskin applicator covers an unusually large area in a short time. Extensive coverage makes Cem-Seal economical.

AUTO SAFETY BELT INSTALLATION KIT

(Use Key # 680 on Inquiry Card on page 71)

A VEHICLE safety belt that can be easily installed by the motorist in his own car is being marketed by General Textile Mills, Inc. The kit provides individual seat belts for each person, in accordance with safety recommendations. Included are U-bolts and top-and-bottom steel plates for attaching the ends of the belts to the floor.

The belts are of the quick-release design, have a loop strength of 4,000 lbs., and are available in a variety of colors. The only tools required for installation are a ¼ inch drill and a wrench for tightening the stop-nuts.



MOVING SLOGAN SIGNS

(Use Key # 681 on Inquiry Card on page 71)

TO ATTRACT attention dramatically to safety messages and slogans, the Flash-O-Graph Corp. has developed an illuminated moving-message sign, which is essentially a miniature version of the famous Times Square news sign. It consists of a perforated message tape which moves in front of a fluorescent light, spelling out a safety message. It flashes a sentence of 60 letters five times a minute.

The messages or slogans can be changed easily and quickly. The units can be used in offices and factories, at entrances and in recreation and lunch rooms. The Flash-O-Graph is available with a wide variety of standard tape messages or special wordings can be made to order. Users can also make their own messages with a punch-kit also available.

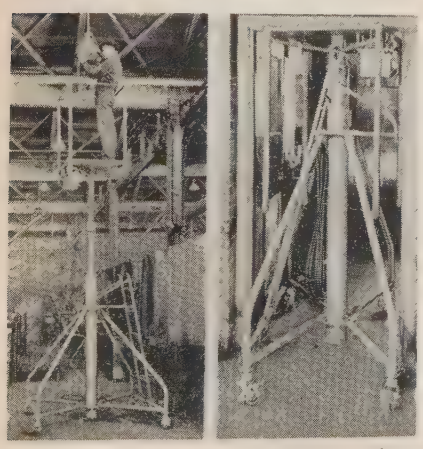
HYDRO-ELECTRIC WORK TOWER

(Use Key # 682 on Inquiry Card on page 71)

A NEW hydro-electric elevating work tower for one-man use is announced by Safway Steel Products, Inc. Powered by a ¾ hp. single-phase electric motor, the "Moto-Lift" can be plugged into any 110 volt a-c outlet. The motor operates an efficient hydraulic pump to raise the work platform from 7 ft. to 17 ft. above the floor in 25 seconds. The working capacity is 400 lbs. The plug-in tower is being offered in addition to improved battery and hand-operated models, on the market for several years

The new plug-in tower is provided with 50 ft. of heavy duty extension cable, permitting work along a 100 ft. strip before moving to another outlet. Battery and hand operated models are self contained and can be used anywhere.

Towers are equipped with swiveling casters to follow progressive work. One man easily rolls a tower on its 5-in. diameter wheels with rubber tires. Positive safety brakes act on both the wheel and the swivel to lock the tower in each working position. The 4-legged 61 by 61 in. base provides rigid and stable support. However, towers can be telescoped to pass through low, narrow doors as small as 7 ft. high by 30 in. wide. Platform guard rail posts slide down in their sockets, and the base folds to 30 by 80 in. In the event of complete hydraulic failure, a mechanical brake will instantly lock the telescoping support tubes in position.

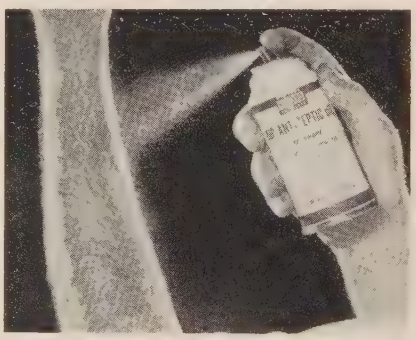


LIGHTWEIGHT CLOTHING FOR MODERATE HEAT

(Use Key # 683 on Inquiry Card on page 71)

IN INDUSTRIAL operations where personnel need some protection against heat, a new line of aluminized glass cloth garments made by The H. M. Sawyer & Son Co. will provide both comfort and safety. The material is exceedingly light in weight, flexible and resistant to abrasion. The garments are not designed for fire-approach or fire-entry purposes nor for production operations involving excessive heat or molten metal splash, where heavier types of clothing are required.

The aluminized fabric, according to laboratory tests, has a reflectiveness of about 60 percent. It is available in various types of garments, such as aprons, coats, jackets, hoods, sleeves, coveralls, suits, etc., which are suitable for protection against mild heat.



SPRAY ANTISEPTIC

(Use Key # 684 on Inquiry Card on page 71)

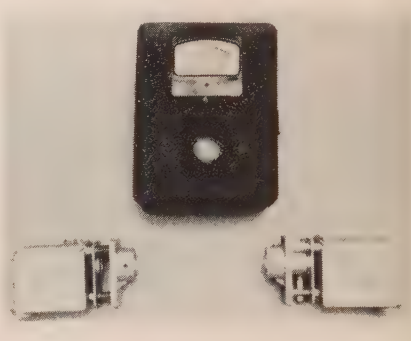
KIP Antiseptic Oil has long been a popular and efficient medication for use in the treatment of burns and other wounds. To make it easier to apply, the E. D. Bullard Company has packaged Kip in 5.5 ounce Aerosol spray containers.

The application of the aerosol antiseptic is painless and sanitary. It is necessary only to touch the button on the top of the container and first aid treatment is completed. The relief of pain is rapid and the area is thoroughly and lightly covered with the soothing medication. The container is small enough to be carried in the pocket or glove compartments of cars and trucks or carried in first aid or tool kits. There is enough of the medication to last for 150 seconds of continual spraying. This will cover an area of approximately 6 square feet for medication.

ANTISEPTIC POWERED SOAP

(Use Key # 685 on Inquiry Card on page 71)

A NEW KEMSUDS product, Platinum Balm—an antiseptic powdered hand soap has been announced by The Chemical Corporation. The new soap contains a graded, safe all-vegetable scrubber particularly formulated for women in industry. It also has a very high percentage of "beaded" Ivory soap and a large quantity of emollient which offers protection from chapping in cold weather, leaving the skin soft and smooth. In addition, it contains lanolin and G-11 (Hexachlorophene). G-11 helps protect both men and women workers against skin infection and helps prevent contamination of the materials they handle. It is packed in 5-pound boxes, 12 to the case, and 200-pound barrels.



SMOKE DENSITY INDICATOR

(Use Key # 686 on Inquiry Card on page 71)

FIREYE Smoke Density Indicator System FE-3 makes available to industry a new, efficient method for keeping smoke discharge within limits of all smoke control and air pollution ordinances. For use with the system, three smoke density recorders are available.

The system consists of a light source, a photoelectric scanner, and a smoke density indicator. Light source and scanner are installed on the stack or breeching so that the light beam is aimed directly at the lens of the scanner. The density of smoke obscuring the light beam is accurately measured and indicated directly on the smoke density indicator in terms of both smoke density and Ringelmann Number. An alarm relay provides for the operation of an external alarm at any preset value of smoke density.

One of three Series 55 recorders may be used with the new indicator system to make continuous recordings of smoke conditions over a 24-hour period. The 55AK1 Smoke Time Recorder is a single pen unit and records periods of excess smoke on a twelve-inch chart, showing both time and duration of excess smoke over a preset value. The Type 55AL1 Smoke Time Recorder provides eight-inch chart records of time and duration of excess smoke from two or more smoke density indicators. The Type 55AM1 Smoke Density Recorder provides a continuous record of smoke density directly on a twelve-inch chart and is calibrated to record the Ringelmann Number of the smoke condition.

(Continued on page 73)

FREE BULLETINS & CATALOGS

As a convenience to executives, these new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. To obtain copies write in the key numbers on the free-postage card below.

TOOLS

Chip-Collecting Air Gun 436
Buffalo Machinery Co., Inc. An air gun that eliminates the danger of flying chips in blowing out blind holes in castings is described and illustrated in this bulletin. Unit has a collecting chamber where chips are deposited.

Sheet Lifter & Rotator 437
F. J. Littell Machine Co. Illustrated bulletin shows a device with 8 vacuum cups for lifting large metal sheets and rotating them up to 180 degrees for machining, inspection, vertical stacking and general handling.

MATERIALS HANDLING

Sling Handbook 439
Union Wire Rope Corp. Highly informative catalog of wire rope slings, including full specifications for all types. Highlight is a new ferrule eye splice that offers increased safety against pull-out and safety to hands from its streamlined design. Handbook includes rigger's chart of sling ratings, engineer's notebook and standard signals for crane operation.

Aluminum Conveyor Units 440
Harry J. Ferguson Co. Aluminum gravity roller and wheel conveyors are shown in a 4-page bulletin, which outlines versatility of the lightweight units, the models available and their reduced maintenance.

Truck Stair 441
E. D. Bullard Co. How a retractable stair prevents injuries when climbing in and out of trucks and reduces damage to products is described in this 4-page illustrated folder, which also shows how it is attached to the back of a truck and folds away.

Choke & Pipe Hooks, Binder & Bridle 442
Newman Mfg. & Sales Co. Four kinds of materials handling devices are shown in this bulletin which features manganese steel choker hooks for factory-made slings. Also includes data on load binders designed to prevent damage to load, pipe hooks with safety handles, and pipe sling bridles.

Lift Trucks 443
Yale & Towne Mfg. Co. A 4-color folder gives details on a new series of industrial lift trucks powered by gasoline, diesel or LP-gas engines. "Cut-Away" view shows internal features of engine and torque transmission of the 3,000 to 8,000 lb. series.

Wire Rope Slings 444
American Chain & Cable Co., Wire Rope Sling Dept. A wire rope sling wall chart designed for display on tool cribs, in rigging shops and near cranes or hoists. It lists diameters and capacities of Strand-Laid type slings.

MAIL POSTAGE PAID CARD FOR MORE DATA

PERSONAL PROTECTION

Heat Resistant Glove 445
Olympic Glove Co. This bulletin outlines a new type of welding or burning job glove to protect the wearer from radiant heat. The glove incorporates an inner layer of aluminum foil which reflects the heat away from the skin. Three styles are described.

Women's Protective Clothing ... 446
Klear-Vu Corp. Illustrated catalog offers a line of plastic protective clothing, designed especially for women. Includes vinyl film aprons and sleeves, and also several models of visored flameproofed caps.

Asbestos Safety Clothing 447
Johns-Manville. 12-page booklet describes a line of asbestos clothing, including suits, helmets, aprons, leggings, overshoes, and also a special line of asbestos gloves and mittens that have been treated to increase resistance to heat, oil, water and abrasion. Safety curtains and fire blankets also shown.

Electric Cap Lamps 448
Mine Safety Appliances Co. This 4-page well-illustrated brochure gives full data on a miner's cap lamp powered with a nickel-iron-alkali battery. Includes information on battery-charging equipment.

PLANT MAINTENANCE

Stair Safety Treads 449
Wooster Products, Inc. Fully illustrated folder shows how to repair worn or damaged stair treads and includes a complete selection of extruded and cast metal safety treads suitable for maintenance work.

Chemical-Resistant Paints 450
Croda Ltd. A 12-page booklet describes a line of paints based on plastics that are inert to acids, alkalis, grease and oils. The paints are especially useful in protecting against corrosive fumes or chemicals. Booklet outlines typical uses, method of application, caution in applying and safety of finished coating.

Concrete Floor Repair 451
Master Builders Co. A 7-step procedure for repairing concrete floors with a new non-shrink mortar is described in a folder which also illustrates each step. It outlines the simplicity of application, since it requires only the addition of water, and shows its uses indoors or out.

Cleaning Compounds 452
Magnuson Products Corp. New folder gives condensed information on a variety of products for plant and building maintenance, including several types of floor cleaners, and compounds for walls and painted surfaces, tile & porcelain, drain pipes, granite, as well as skin cleansers.

HYGIENE PRODUCTS

Protective Skin Cream 453
Otis Clapp & Son, Inc. Folder describes a silicone type of barrier hand cream to

(Continued next page)

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READER'S INQUIRY CARD

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NEW PRODUCTS ("WHAT'S NEW" PAGES): Insert the key numbers shown on each item.

FREE BULLETINS & CATALOGS: Insert the key numbers shown on this page.

December, 1955

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Street Address _____

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Free Bulletins (Cont'd)

protect the skin from many industrial and laboratory irritants, such as chemicals, dyes, detergents, cutting oils, grease, etc. Folder lists the many specific uses for the cream and outlines its ingredients.

Less Toxic Solvent 454
Dow Chemical Co. A cold degreasing solvent for cleaning metals contaminated with grease, oil, tar or wax is described in this folder. The solvent has properties similar to carbon tetrachloride but is less toxic and has a relatively low fire hazard. Folder gives full data on properties, evaporation rates, toxicity, etc.

FIRE PROTECTION

Paper Theromometers 455
Paper Thermometer Co. Folder describes a thermostatic paper that changes color when predetermined temperatures are reached. Uses of the graded papers are outlined, including fire prevention to indicate overheating of furnaces, pipes, electrical equipment, etc.

Portable Gas Detector 456
Johnson-Williams Co. A reduced-size, lightweight portable gas detector for combustible gas explorations is described in this bulletin, which outlines two new features: automatic shutoff and an easier system for drawing air samples. Numerous accessories are also described.

Storage Tank Venting 457
Protectoseal Co. Principles of venting flammable liquid storage and process tanks are thoroughly outlined and illustrated in this informative booklet. Also shown are a wide variety of flame arrestors and protective devices and their applications are outlined.

MISCELLANEOUS

Wired Television 458
Taller & Cooper, Inc. The uses of a wired television monitoring system are outlined in this illustrated folder, including remote checking of hazardous conditions or operations, plant & store supervision, theft detection, traffic study, transmission of data, etc.

What's YOUR Problem?

- **Has an accident or fire interrupted production?**
- **Want to know how to prevent it?**
- **Do you need background information on equipment for industrial safety, hygiene, or maintenance?**

As a service to its readers, "Safety Maintenance" will arrange to supply manufacturers literature on the following subjects. Just insert the key number on the Readers Inquiry Card on the preceding page and be sure to fill in your name and address. If you need information on a specific type of product, simply write it in on the Inquiry Card.

Key Number	Subject
	PERSONAL PROTECTION
101	Safety Goggles
102	Face Shields
103	Lens Cleaning & Anti-Fogging Equipment
104	Sweat Band
105	Hard Hats
106	Respirators & Masks
107	Protective Clothing
108	Women's Protection Clothing
109	Safety Belts
110	Safety Gloves
111	Foot Protection
112	Anti-Slip Soles
113	Oil-Proof Soles
114	Welding Helmets
115	Welding Curtains
	FIRST AID AND PERSONAL HYGIENE
120	Protective Skin Cream
121	Skin Cleansers
122	Sanitary Drinking Facilities
123	Athlete's Foot Control
124	Salt Tablets
125	Noise Analysis & Control
126	Antiseptic Medication
127	Burn Medication
128	First Aid Kits & Supplies
129	Stretchers & Litters
130	Resuscitators
131	Eye Wash Fountains
	DUST & FUME CONTROL
135	Portable Ventilator
136	Dust & Fume Collectors
137	Carbon Monoxide Control

Key Number	Subject
	FIRE PROTECTION
140	Fire Extinguishers
141	Safety Cans
142	Extinguishing Ashtray
143	Safer Solvents
144	Degreasing Machines
145	Combustion Safeguards
146	Flammable Liquid Pumps
147	Fire Retardants
148	Fire Blankets
	LIGHTING EQUIPMENT
150	Alarms & Warning Lights
151	Explosion-Proof Lights
152	Electrical Insulation Tester
153	Fluorescent Lamp Guards
	MAINTENANCE
160	Anti-Slip Floors & Mats
161	Anti-Slip Waxes & Finishes
162	Floor Cleaning Compounds
163	Cleaning Machines
164	Oil & Grease Absorbents
165	Paints
	LADDERS & SCAFFOLDS
170	Ladders & Safety Devices
171	Scaffolds
172	Work Platforms
	GUARDS
175	Machine Guards
176	Power Press Feeders
177	Overload Guards
	EDUCATIONAL AIDS
180	Safety Signs
181	Aisle Marking Equipment
182	Safety Awards & Emblems
183	Employee Safety Guide

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for further data on

ADVERTISED PRODUCTS,

NEW PRODUCTS,

FREE BULLETINS & CATALOGS

WHAT'S YOUR PROBLEM?

What's New

(Continued from page 70)

ACOUSTICAL BAFFLES

(Use Key # 687 on Inquiry Card on page 71)

TO REDUCE distracting shop noises in factory areas and improve listening conditions in arenas and auditoriums, the Owens-Corning Fiberglas Corp. has developed "Noise-Stop" acoustical baffles, which are rigid panels made of fine glass fibers and enclosed in an opaque plastic film. The sound-absorbing baffles, which are designed for suspension from the ceiling, are particularly suitable for areas where conventional acoustical ceilings are impractical because of obstructions like monorails, bus bars, sprinklers, lighting fixtures, pipes, girders, etc.

These non-combustible, washable, moisture-resistant and lightweight baffles absorb the noise of clattering machinery by a diaphragmatic transmission of the sound waves by the plastic covering to the tiny air pockets between the glass fibers. The panels may be painted without injuring the plastic film or affecting the baffles' efficiency. The units measure 24 x 48 x 1½ inches.

TELEPHONE AMPLIFIER

(Use Key # 688 on Inquiry Card on page 71)

A NEW 3-ounce telephone amplifier powered by dime-sized batteries is now available for those who use telephones in noisy locations and for the hard of hearing. This phone aid clips over any style telephone receiver. This pocket-size electronic device, manufactured by Remler Company, is a reproducing receiver and a three-stage amplifier with tiny transistors taking the place of tubes. It is said to increase the acoustic output of telephones by 49 decibels. The clip-on unit picks up speech from the telephone by magnetic induction which cuts out all room noise. A special circuit shuts out disturbances created by electrical circuits and appliances.

Volume is adjusted while in use and the unit automatically shuts off when removed from the telephone. The volume control "off" switch can be used to eliminate battery drain when the Phone Aid remains attached to the receiver. Batteries last for several months.

AUTOMATIC EMERGENCY LIGHT

(Use Key # 689 on Inquiry Card on page 71)

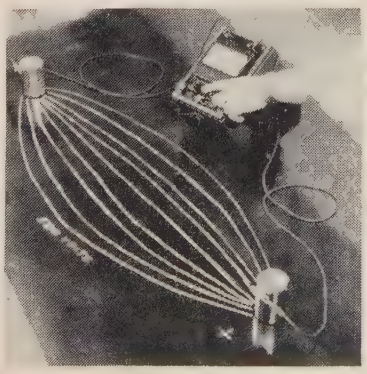
ACCIDENTS, theft, panic, and confusion can be avoided during sudden blackouts by these compact, self-contained emergency lighting units. Reddi-Lites have a built-in relay system which automatically illuminates two sealed beam floodlamps the instant normal lighting is interrupted. The danger arising from light failure is recognized by various states and municipalities who have made the use of emergency lights mandatory within their jurisdiction. Made by American Emergency Lighting Co., the units weigh 13 pounds less battery, and bear a 30-month factory warranty. They are U-L approved.

No installation or special wiring is required, since the lights are furnished with a 6-foot rubber cord and plug which can be plugged into any 110-115 A.C. outlet. A red pilot light burns continually to show that current is connected. Built-in test equipment, consisting of a momentary toggle switch and voltmeter, tests both battery and lights.

APPROVED CONDUCTIVE WAXES

(Use Key # 690 on Inquiry Card on page 71)

UNDERWRITERS' LABORATORIES has listed as standard Huntington's VC-2C and H-22 Conductive Waxes for use on conductive floors. Wherever static electricity is a danger and conductive floors have been installed, it is necessary to maintain the floors with a wax that is also conductive.



Conventional waxes and finishes are insulators which disrupt conductivity.

VC-2C Conductive Wax is a clear wax for use on all conductive flooring. H-22 is a black wax designed for static-conductive linoleum, rubber and other conductive floors which are black. Both produce a durable, water-resistant surface that may be polished to a high luster. Tests prove that they retain their conductivity for a long period of time.

Washing conductive floors also presents a serious problem as many cleaning agents form a dangerous, insulating film on the surface. In the U.L. tests Huntington Waxes retained safe electrical resistance after many days of washing with Spal Concentrate. This is an all-purpose cleaner that contains no soap and cleans floors, walls, woodwork, metal, leather and plastic.

To be safe conductive flooring should have a resistance between 25,000 and 1,000,000 ohms. Floors should be tested routinely with a conductometer like that shown in the illustration to be absolutely certain.

VOLATILE SOLVENT CONCENTRATE

(Use Key # 691 on Inquiry Card on page 71)

OF INTEREST to the electronic, radio and metal fabricating industries is The Curran Ordinance Chemistry Laboratory's newly developed synergistic volatile solvent concentrate. This concentrate is said to be completely new in solvent chemistry concept and will produce highly effective safety solvent cleaning replacements for toxic carbon tetrachloride. The new concentrate is described as a water-white volatile solvent which does not burn, and imparts fire extinguishing qualities to lower cost solvents. It possesses the valuable property of boosting the dissolving power and the drying performance of lower cost mineral spirits and other solvents when as little as one pint of the concentrate is added to a gallon of low cost solvents.

Called "BOOST"®, the concentrate is said to produce solvent compounds having drying and evaporation properties substantially quicker and faster than carbon tetrachloride, higher solvency, relatively low toxicity, a more economical evaporation curve and a tendency to inhibit rusting of ferrous metals. The concentrate is packaged in hermetically sealed, disposable, one-pound tins.

IMPROVED SAFETY HAT

(Use Key # 692 on Inquiry Card on page 71)

A NEW MODEL of the well-known MSA Shockgard safety helmet, redesigned to give even greater protection, has been introduced by Mine Safety Appliances Company. Dielectrically tested at 15,000 volts for one minute, the new hat shows less than eight milliamperes leakage. It withstands 40 foot-pound impact tests without losing any of its dielectric strength.

It is made from a specially formulated plastic material, in yellow and grey. It has no metal parts. Like previous models, it is impervious to oil, grease, and most chemicals. It offers effective protection over a large temperature range—25° F. below and 160° F. above zero. MSA reports that it meets all of the specifications under Schedule Number AP-1 established by the Edison Electric Institute. The replaceable snap-in suspension allows for adjustment to fit a full range of head sizes. Redesigned winter liners and chin straps are available.

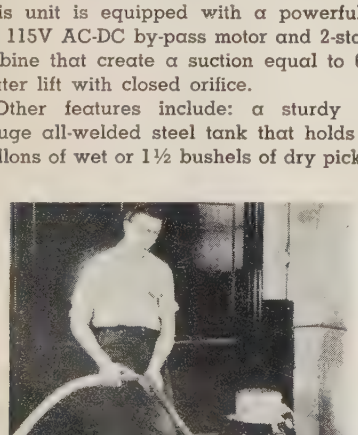
WET-DRY CLEANER

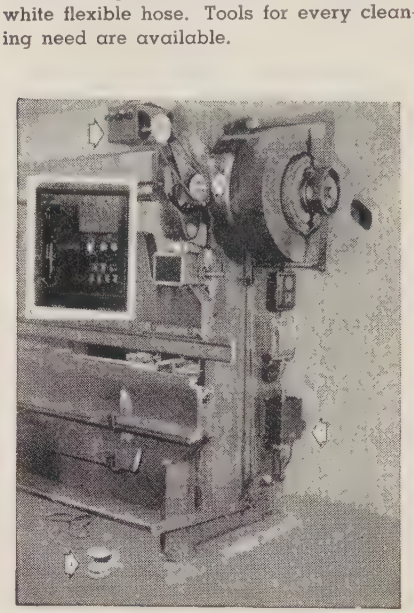
(Use Key # 693 on Inquiry Card on page 71)

UNUSUAL pickup power on the big wet or dry cleanup jobs is claimed for Multi-Clean's G-400 Industrial Vacuum Cleaner. This unit is equipped with a powerful 1 hp 115V AC-DC by-pass motor and 2-stage turbine that create a suction equal to 63" water lift with closed orifice.

Other features include: a sturdy 20-gauge all-welded steel tank that holds 10 gallons of wet or 1½ bushels of dry pickup material; 16-gauge 3-conductor safety cable with built-in strain reliever, and easy on-off tank cover clamps that preserve airtight seal yet unsnap with a flick of the fingers.

The G-400 rolls freely on 4 ball bearing casters and, according to the manufacturer, will pass through an 18" doorway. A 25" wheelbase insures against tipping when machine is pulled by the hose. With an overall height of 30", it weighs only 53 lbs. Standard equipment includes a 10' x 1½" white flexible hose. Tools for every cleaning need are available.





IMPROVED CONTROL FOR PRESS BRAKES

(Use Key # 694 on Inquiry Card on page 71)

SOME NEW features in the "AAC" Automatic Press Brake Control have been announced by American Actuator Corp. It now automatically slows the movement of the ram during the bending stage, and prevents kinking or whipping of even the largest sheets.

The AAC Control provides means for performing faster and safer press brake operations with unskilled as well as skilled operators. Its features include Preset Stop, which automatically stops the ram at any predetermined point in the down stroke; Self Return, which automatically returns the ram to the top of its stroke; and Non-Repeat, which prevents the press brake from repeating. Controls can be set for any one or any combination of these operations, as well as for one or more operators. Operation is by either foot or hand-switch, and also for double clutch. For the ultimate in safety, settings may be so arranged that the hand button control brings the ram down to preset stop; pulsing begins and continues until the bend is made, and then the foot switch causes the ram to complete its cycle. As an additional safety measure, the control box is locked. Only a pilot light and the on/off switch are on the outside.

The electronic control can be installed on any press brake regardless of size, age or manufacture. It consists of four components as shown in the picture: limit switch box tied in with the stroke of the ram (1, 2); solenoid (3); foot switch or hand button (4); and Control Panel (5).

PORTABLE HAND PUMP

(Use Key # 695 on Inquiry Card on page 71)

A HANDY time-saving portable hand pump for refilling all types of oil cups and reservoirs quickly and conveniently, directly from a gallon or larger container through a light flexible hose. Also handy for dispensing oil to bearings, cutting tools, conveyor and drive chains, gears, pipe threading operations, spindle bearings on textile machinery, etc., it is made by Trico Fuse Mfg. Co. Because the suction hose can be tapped directly to the gallon or larger container in which oil is purchased, the need for transferring oil from one container to another is eliminated. The large reserve oil supply also eliminates constant stoppages to refill small oil cans. "Redi-Pump" dispenses oil in any direction or angle, making it suitable for hard-to-get-at locations. No air lines are needed. The nozzle is made of sturdy alloy steel to withstand possible damage through hard use.

WATER-REPELLENT SHOES

(Use Key # 696 on Inquiry Card on page 71)

WATER REPELLENT work shoes that resist absorption of chemicals and dirt while lasting longer is the feature of Sylflex tanned shoes and boots introduced by Red Wing Shoe Co. Sylflex is the newly developed Dow Corning silicone treatment which makes leather permanently water repellent and lengthens the life of shoes.

The new work shoes are offered initially in two styles: a six-inch shoe and an eight-inch outdoor boot. They are made with a high grade glove leather, and silicones are applied while it is being tanned. Each small leather cell is thereby given a water repellent covering, leaving air spaces between cells to allow the shoe to "breathe." The process offers a permanent water repellency and, in addition, does not add to the shoe's weight. These shoes are said to be warm and flexible even after prolonged wear in bad weather.

MAGNETIC CONVEYORS

(Use Key # 697 on Inquiry Card on page 71)

CLOSE grouping of machines to save floor space and increase automation is possible with "Space Saver" Magnetic Conveyors, a product of The Homer Manufacturing Co., Inc. Because they convey ferrous pieces and parts such as nuts, bolts,

nails, washers, tin cans, bottle caps, stampings, etc., up inclines as steep as 90°, they eliminate long conventional conveyors with gradual inclines. Another application is for removing scrap from receiving pits, made possible because the conveyors will pick up ferrous pieces from floor level.

They also automatically stack flat ferrous pieces, feed machines and perform other handling operations formerly requiring manual effort. Conveying speeds can be planned so that material transfer between machines may be synchronized for automatic operation. The magnetic conveyors are available in stationary or portable types—standard or custom units for new or existing production lines.

PERMANENT FLOOR PATCH

(Use Key # 698 on Inquiry Card on page 71)

A FLOOR patching material that can be applied over wet floors and has unusual resistance to oil, grease, acids, and alkalis, even blood is the newest development of Colonial Refining & Chemical Company. The company claims that creameries, dairies, meat packing and cold storage plants, oil and gasoline plants, machine shops, canneries are a few of the many industries who will benefit from the use of "45" PATCH.

The material comes in powder form and is mixed with water at time of application. Special quick-setting powders have been added for a maximum "setting up" time of 4 hours. Floors can be put back into use within 24 hours. The material should not be confused with temporary asphalt-type, coarse-grained patch materials. It forms a permanent bond with the existing floor area and is said to last as long as the floor itself. It can be painted over, can be used inside or out, and will not chip or crack once it sets.

ELECTROSTATIC NEUTRALIZER

(Use Key # 699 on Inquiry Card on page 71)

AN INDUCTION type of electrostatic neutralizer has been developed by The Herman H. Sticht Co., Inc. for eliminating static electricity charges from paper, textiles, plastics, rubber coated materials, films or sheeting. When the device, called the "Magic Wand," is mounted on the manufacturing or processing machinery,

the materials are drained of their electrostatic charges as they travel over drums or rollers.

The induction neutralizer utilizes wire bristles distributed along a bar and grounded to the processing machine. It will effectively neutralize high charges as well as low ones. The "Magic Wand" can be used in hazardous locations where flammable vapors or liquids are present, even within enclosures. Use of this type of device eliminates fire and explosion hazards, protects personnel from injuries caused by static shock, prevents waste by eliminating the clinging or tearing of materials, and increases production by permitting higher processing speeds.

FEATHERWEIGHT GOGGLES

(Use Key # 700 on Inquiry Card on page 71)

WORKERS WHO balk at wearing protective goggles because of their fatiguing weight are now offered a featherweight plastic goggle for eye protection and comfort. Made by General Scientific Equipment Co. and weighing only an ounce, these new breakproof goggles may be worn throughout a full working day without causing strain to the wearer. Extremely hard-surface acetate lenses offer greater resistance to abrasion, sparks, flying chips, and spatter. They are suitable for woodworking, grinding, spot welding, and countless other jobs requiring eye protection.

Large enough to be worn over prescription glasses, goggles fit like ordinary eyeglasses but stand off farther from the face, thus allowing greater air circulation. One-piece lens offers full vision, measures 0.050 in thickness. Available in clear or medium green. Rugged plastic frame has smooth contour-molded nosepiece and brow rest. Temples made of plastic-covered cables are flexible yet strong.

PALM-COATED JERSEY GLOVES

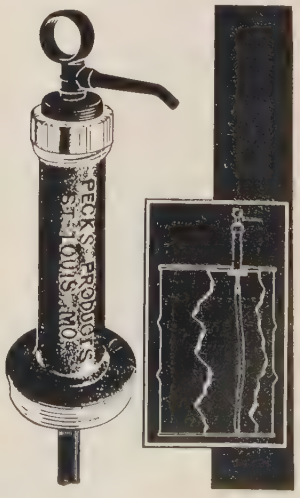
(Use Key # 701 on Inquiry Card on page 71)

TWO NEW models have been added to the improved line of Stanflex work gloves made by The Pioneer Rubber Co. The palm-coated, knit-wrist model, shown here, and also a palm-coated, 10-inch band-top style. Both gloves have been carefully designed to allow more than 47 square inches of seam-free work surface, with seams completely eliminated from abrasion points. The specially compounded plastic coating offers a non-slip satin finish for outstandingly long service.

PLASTIC DRUM PUMP

(Use Key # 702 on Inquiry Card on page 71)

A NEW plastic drum pump for almost any liquid is now available from Pex, Inc. The dispenser, which fits any container with a 2-inch bung, dispenses a measured ounce at a time. It may be used for acids, alkaline materials, detergents, heavy or light viscous materials as well as other liquids.



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Now that you have passed judgment on these accidents, let's review the answer to see how well you made out. Don't be disturbed if you didn't get a perfect score. Very few safety men have! Each case should have been scored as a "preventable" accident.

13. Caused by this driver. The fact that the drunkometer test cleared the driver, in so far as legal degree of intoxication is concerned, does not bear too heavily on this case. It is possible that the limited amount of alcohol, in this case, might have impaired the driving ability of this individual. But far more important is this: the technique employed for passing was obviously faulty on the part of the driver. The vehicle should have pulled into the passing lane well in advance of the actual passing. The fact that the other vehicle slowed down, causing the driver to run into him, or to nick him as he went around, shows that he attempted to pass much too late, thereby contributing to the accident.

14. Caused by this driver. The basic cause of this accident is similar to that cited in No. 13. Had the driver followed the large truck at a distance of 70 to 100 feet, instead of 10 feet, his range of vision would have been sufficiently extended to eliminate the necessity for pulling out into the path of an oncoming vehicle, since it would have been seen well in advance. Further, this technique would have permitted him to accelerate when he saw the way was clear, so that he would have possessed actual passing speed by the time he pulled up to the truck.

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• There is a CESCO hood for positive protection from every type of industrial exposure. These include air-supplied welding hoods, paint spray and dust hoods, foundry hoods, babbitting hoods, sand blast and abrasive masks, etc.

FOUNDRY Hood (No. 10256) is for grinding work, especially castings. The hood slips on easily, and air supply is regulated by wearer. There is plenty of room inside the hood for the wearing of safety glasses or goggles.

The ACITEX Hood (No. 732) provides protection from caustics, acids and splashing liquids. Acitex material is highly resistant to corrosive action, is clear, lightweight, flexible and extremely durable. The hood completely covers the head, chest and shoulders. Equipped with a supplied air unit.

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